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PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COLUMBIA-NORTH PACIFIC REGION COMPREHENSIVE FRAMEWORK STUDY OF --ETC(U)
JUN 71 E L ARNOLD, R P CLARK, R J COFFMAN

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Columbia-North Pacific Region

Comprehensive Framework Study
of Water and Related Lands

APPENDIX

XIII

RECREATION



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PACIFIC NORTHWEST RIVER BASINS COMMISSION
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JUNE 1971

This appendix is one of a series making up the complete Columbia-North Pacific Region Framework Study on water and related lands. The results of the study are contained in the several documents as shown below:

Main Report

Summary Report

Appendices

- | | |
|---|---|
| I. History of Study | IX. Irrigation |
| II. The Region | X. Navigation |
| III. Legal & Administrative
Background | XI. Municipal & Industrial Water Supply |
| IV. Land & Mineral Resources | XII. Water Quality &
Pollution Control |
| V. Water Resources | XIII. Recreation |
| VI. Economic Base &
Projections | XIV. Fish & Wildlife |
| VII. Flood Control | XV. Electric Power |
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Pacific Northwest River Basins Commission
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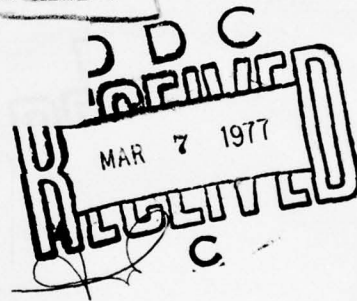
Recreation

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APPENDIX XIII

Columbia-North Pacific Region
Comprehensive Framework Study
of Water and Related Lands. Appendix XIII.
Recreation,

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APPENDIX XIII
Recreation

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Basic data presented in this Appendix were obtained from various State and Federal agencies by individual contributors too numerous to record here. Members of the Recreation Studies Group want to thank each one for his contribution and cooperation which made completion of this manuscript possible.

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I N T R O D U C T I O N

Many of the Nation's most varied and outstanding natural outdoor recreation attractions are found in the Columbia-North Pacific Region. These include over 2-1/2 million acres of water, 10,151 miles of potential wild, scenic, and recreation rivers, and 550 miles of Pacific Ocean shoreline. About 60 percent, or 105 million acres, of the region is in public ownership, most of which will continue to be available to the public for outdoor recreation purposes for the foreseeable future. With the 1965 population of nearly 5.9 million, there were over 15 acres per capita of available public recreation land. Even with a projected increase of the population to 12.7 million (17)^{1/} and ^{2/} by 2020, and the substantial increases in per capita income, leisure, and mobility, the natural recreation potential can satisfy the quantity but perhaps not the quality demands of the region's population plus the anticipated number of tourists. However, this potential will not be realized without coordinated long-range planning followed by adequate action programs for resource preservation, management, and development.

In the Puget Sound-Willamette Valley areas, particularly, much of the natural scenery is being altered by homes, shopping centers, highways, and industrial plants. The rural areas, once close to the city centers, are becoming more remote.

Concern over the diminishing recreation opportunities and the demand for more outdoor recreation opportunities nationwide resulted in the establishment of the Outdoor Recreation Resources Review Commission in 1958. The report was completed in 1962. One of the most important commission findings was that better planned, bolder, and more imaginative efforts are required to meet both the qualitative and quantitative needs of the American people.

PURPOSE AND SCOPE

The purpose of this appendix is to evaluate for the region as a whole and for each subregion the existing recreation resources and facilities, determine recreation needs, and outline framework plans to satisfy those needs in the foreseeable future for the water and related portion of outdoor recreation.

^{1/} Number in parentheses refers to Bibliography on page 315.

^{2/} Adjustments of these data to reflect Type 2 projections for Willamette and Puget Sound Subregions, result in a regional population of 15.4 million.

Recreation values and needs are identified for the years 1970, 1980, 2000, and 2020. Major emphasis will be placed on the need for water-related outdoor recreation.

The specific objectives include:

1. Provide an inventory of present outdoor recreation lands, water resources, opportunities, facilities, and usage in the region and in each subregion.
2. Project gross demand for years 1970, 1980, 2000, and 2020 and convert those into net needs for additional resources and facilities listing water-related recreation separately; needs to retain public lands and waters in public ownership; needs to acquire public lands and impound additional water; and needs for development of recreation programs.
3. Identify irreplaceable resources such as free-flowing rivers, wilderness areas, historic sites, and areas of special scientific interest.
4. Identify programs for the preservation and protection of irreplaceable resources.
5. Identify outdoor recreation problems, especially those directly related to water.
6. Identify measures for protection and enhancement of environmental quality, such as scenic corridors adjoining roadways and waterways, and flood plain zoning.
7. Identify means for satisfying future water-related recreation needs.

SUMMARY OF FINDINGS AND CONCLUSIONS

Findings

The following findings resulted from the general analysis of this study and from information contained in other recreation studies within the region:

1. Each of the states within the region has completed statewide comprehensive outdoor recreation plans which cover the demand, supply, and needs for the full range of recreation activities. The basic demand data contained in these plans form a basis for projecting the regional demand. The statewide plans are updated periodically and therefore will differ from time to time from this study unless the base is adjusted accordingly.

2. Since the region and each subregion cover such a large area and diverse recreation resources, only general observations can be made regarding a recreation plan. The total land and water resources of the region could be adequate to satisfy foreseeable water related recreation demand until year 2020 if properly developed. There would be deficiencies due to the imbalance between the location of the resources and the location of the population. Water related recreation demand is expected to increase from 97.5 million recreation days in 1970 to over 450 million recreation days by year 2020. Water related development need is expected to grow from the current 16.2 million recreation days to 371 million recreation days by year 2020. To satisfy this demand will require a full scale effort at all levels to provide additional opportunities of a type, quality, and quantity and in a location consistent with recreation habits and desires.

3. There is a real need to preserve (at an early date) additional irreplaceable resources such as free-flowing streams, areas of wilderness, scenic roads, shoreline areas, estuaries, historic and archeological sites, and areas of special interest. Experience has shown that unless such areas are set aside as soon as possible that many may be lost to future generations though construction of roads, reservoirs, power lines, airports, and urban expansion. Increasingly, stretches of beaches and tidelands are in threat of being filled or dredged to accommodate residential and commercial uses. There are many areas and features which need to be identified, evaluated, protected, and developed for general recreation use before they are utilized for other purposes.

4. Recreation and tourism is among the top ranking industries in the Pacific Northwest and one which is growing rapidly. With the increase in the economic importance comes the need for a closer working relationship between the public and private sectors so that private enterprise can play an increasingly significant role in satisfaction of predicted increased recreation demand.

5. The statewide outdoor recreation plans of Washington, Oregon, and Idaho indicate the most pressing need for both water related and nonwater related recreation is within and near the major urban areas such as Seattle-Tacoma, Portland, Spokane, Boise, Eugene, Yakima, Idaho Falls, Medford, and Salem. The existing Type 2 comprehensive studies covering Subregions 9 and 11 contain recreation plans for each of these areas. These studies are based on more specific information than the other subregions.

Conclusions

The following major recommendations are made in this report as the most appropriate means to guide future recreation within the region:

1. Based on the complexity of problems and urgency of action, the priority for undertaking more detailed recreation studies of the subregions is as follows:

- Subregion 10 - Coastal
- Subregion 2 - Upper Columbia
- Subregion 6 - Lower Snake
- Subregion 5 - Central Snake
- Subregion 1 - Clark Fork-Kootenai-Spokane
- Subregion 4 - Upper Snake
- Subregion 7 - Mid Columbia
- Subregion 8 - Lower Columbia
- Subregion 12 - Oregon Closed Basin

2. Each subregion section contains a list of principal recreation streams, potential roadless areas and potential scenic roads, all of which are recommended for study to determine their appropriations for preserving or establishment as units of a Federal or State system. These lists are based on judgment of the recreation managing agencies and contain only the most outstanding items and are not intended to be a complete list of all potential. Prior to undertaking any specific development proposals on any of these streams or land areas, the effects of such actions upon the environmental quality and recreation value should be identified. This does not mean to infer that all other streams and land areas are of no consequence.

3. It is recommended that this appendix report be updated periodically to reflect changes in the statewide outdoor recreation plans to maintain consistency between river basin and state recreation planning efforts. This recommendation includes data from the historical and archeological preservation programs of the states.

4. During the course of this study, it became apparent there was a need to obtain more and better information before a more specific recreation plan for the region can be developed. Recommended studies and research to assist future planning include:

Development of a better system to evaluate the potential of recreation land and water for both public and private ownerships.

Determination of recreation use capacities by recreation class of land and water areas.

A study to determine appropriate standards for coastal zone management, including the estuaries.

An inventory of the existing supply of public and private outdoor recreation lands and facilities and records of use is needed to insure uniformity for planning purposes.

A study should be undertaken to determine methods for greater distribution of recreation uses both in terms of time and location.

5. Strong zoning and other land use controls should be effectively and uniformly applied to guide future growth. One approach might be broad zoning by the states based upon statewide land use plans.

6. High priority should be given to acquisition and development of recreation areas and access to adjacent existing water areas. Construction of new reservoirs for recreation use should be undertaken only when there is a demonstrated need in areas close to population concentrations that lack suitable water surface acreage.

BACKGROUND

The Columbia-North Pacific Region embodies widely divergent outdoor recreation opportunities. There are few regions of the United States that have comparable opportunities to enjoy the varied experiences presented by the different geologic, topographic, ecologic, and climatic conditions present in this region.

Outdoor recreation is an important and expanding aspect of life for residents of the Pacific Northwest. In terms of employment, tourism is the fourth largest and probably the fastest growing basic industry in the region. Only food, defense, and forest products industries, account for greater employment. (22)

Outdoor recreation in the region has assumed the important dimension it has for understandable reasons. Like most people of this Nation, the residents have more leisure than ever before and increased disposable income. The pressures of the times make it necessary to find tension-releiving diversions. Outdoor recreation, in all of its myriad facets, has become the most important of these diversions. The mental, physical, and spiritual benefits derived from outdoor recreation fill basic and fundamental human needs.

As man seeks diversion to help maintain his life balance, he gains new perspective through an increased awareness of his immediate environment. This increased awareness places greater demands on the out-of-doors.

The combination of increased affluence and a greater interest in his environment causes a continuing change in the pattern of life of the average resident of this region and of the residents of the Nation as well. The ease of travel and recent improvement of recreation equipment also contribute importantly to continuing change in the pattern of life.

The recreation potential of the Columbia-North Pacific Region has become better known nationally. The abundant recreation opportunities are no longer enjoyed by its residents alone. People come from all parts of the Nation and they come in greater numbers each year. Some of them come in search of the "great open spaces," "the call of the wild," or the north woods. Some come where there is room for the pleasures of the outdoors and some to escape or just to look; whatever the reason, they come.

Together with the increase in resident population, the ever-increasing visitation of people from outside the region exerts demands on the recreation areas never before believed possible. The population and industrial growth is putting "the squeeze" on available outdoor recreation space. New towns, expanding cities, suburban and rural industrial complexes, new roads, airports, and highways are still encroaching into the outdoor recreation space. Not only are present facilities being overtaxed, but potential recreation sites are diminishing as well. As a result, there are numerous recreation areas and sites which are rapidly reaching or have reached a point of overuse and others have already reached or exceeded their saturation point. This phenomenon is not limited to western Oregon and Washington but also is affecting other parts of the region. Despite the fact that the Columbia-North Pacific Region boasts of great areas of wilderness and of plains and valleys yet unused and unspoiled, the face of the land is rapidly changing. Consequently, the region is confronted with several distance problems which demand immediate attention.

There is an urgent need for a regional comprehensive outdoor recreation plan. The successful formulation of this comprehensive plan will require the cooperation of all agencies involved: Federal, state, local, and private. Planning must take into consideration all levels of need and avoid any tendency toward local interests alone. The ORRRC report in 1962, provided the foundation and impetus for such planning.

In addition to the need for fully coordinated planning efforts, a need also exists for a comprehensive public education program which points out the present and future problems and demands of outdoor recreation. An educated public, cognizant of and sympathetic with the inherent problems, is essential to the success of imaginative, realistic, and qualitative planning.

Passage of the Land and Water Conservation Fund Act to provide financial assistance through grant-in-aid programs has stimulated a great increase in recreational development at all levels of government. All states in the region have individually prepared statewide comprehensive outdoor recreation plans; in addition, bond issues have been passed to provide matching grants. Recent action also includes establishment of new national parks and recreation areas; an expanded system of wildernesses; trails; wild, scenic, and recreational rivers; and water and air pollution control programs. Other state and local programs such as the Willamette River Parks System, beach and shoreline acquisition programs, and emphasis on urban recreation have been important in meeting the most pressing needs.

PRESENT ENVIRONMENTAL AND CULTURAL FEATURES

Esthetic and Cultural Values

The total living environment has today become a matter of great concern. Elements such as the topography and climate will endure. High quality scenery, air and water in proximity to urban centers, are factors that attract new residents, but may disappear if present effects of population growth, urbanization, land use, and water and air pollution continue. In a recreation sense these are elements whose long-run value to an individual and significance to a Nation lie in those qualities which provide mental stimulation, inspiration, satisfaction, and appreciation of events that have gone before.

This report considers these values in two categories. Esthetic values relate to those natural features which appeal to the eye and mind of the beholder. Cultural values comprise man-made or man-related features which enable one to reconstruct and, to a degree, relive events of the past and develop an understanding and appreciation of man's struggles in relationship to other elements of the environment. This does not imply that innumerable other environmental and scientific values should not be recognized.

Natural Resources

Natural resources such as topography, climate, forests, rivers, fish and wildlife have long contributed to the way of life in the Columbia-North Pacific Region. Early settlers, struggling to wrest a living from the land, met the wilderness as a foe to be conquered. The struggle was bitter with existence depending on the ability to manage the forest and plow the grasslands for cultivation. The natural resources seemed inexhaustible, and little thought was given to the time when they would be in short supply.

Among the outstanding scenic areas in the region, several have been recognized for their national significance and have been declared eligible for and some designated as Registered National Natural Landmarks. Included in this category are Ginkgo Petrified Forest in Washington, Glacial Lake Missoula in Montana, and John Day Fossil Beds in Oregon to name only three.

The region has a wide variety of landscapes. In broad terms these relate to the major topographic divisions which include the coastal strip, Coast Range, the Puget Sound Trough, Willamette Valley, Cascade Mountains, the Columbia Plateau, Snake River Valley, and the Rocky Mountains. Within this framework, natural phenomena of great contrast appear on a wide scope. Some have been accorded preservation status; others, identified and unidentified, deserve protection for their own intrinsic value.

Landforms

The topography of the region generally consists of a series of north-south trending mountain ranges and intervening valleys and plains. It classically illustrates the geologic forces at work.

Within the Rocky Mountains and the Cascade Range, glacial erosion has produced some of the Nation's most outstanding mountain scenery. Prime examples of ice carving are found in Glacier, Grand Teton, and North Cascades National Parks, the Bob Marshall Wilderness, Pasayten Wilderness, and the Glacier Peak Wilderness. Many high mountain peaks have living glaciers.

Associated with glacial erosion are significant areas of erosion by water. Rivers and mountain stream channels, perhaps originally scoured by glaciers, have been cut deeper by running water. The Grand Canyon of the Snake, Grand Coulee, and the Salmon and Rogue Rivers exemplify the beauty wrought by this geologic process. Perhaps the most unique, however, is the Columbia River Gorge where the river cuts through the Cascade Range.

Faulting and folding of the rock strata have also played an important role in producing the scenic landforms. Examples are abundantly distributed and often occur in the Northern Rocky Mountain glacial scenery. The Cascades, particularly the northern portion, and Teton Mountains are prime examples. Others include the Sawtooth, Bitterroot, and Seven Devils Mountains.

Past volcanic actions have resulted in the formation of such spectacular features as Crater Lake, Mount Hood, Mount Rainier, and others in the Cascade Range. Jordan Craters, Craters of the Moon National Monument, and the numerous thermal springs are other examples of volcanism.

Wind has helped create such interesting landforms as the St. Anthony Sand Dunes, Bruneau Sand Dunes and the dunes along the Oregon coast. The latter are an interrelationship of dunes, lakes, and forests constituting one of the most interesting records of geologic history and ecology to be found in the development of the present day coast.

Underground landforms add to the scenic enjoyment of the region. Oregon Cave National Monument and the lava caves near Bend in Oregon, Ape Caves in Washington, and Ice Caves in Idaho are examples.

Plant and Animal Life

Ecological values of the region are of interest on a local, regional, and national scale. The effects of soil, temperature, and moisture on plant and animal communities vary with altitude and even latitude. Conservation of all fish and wildlife species and their native habitat should be the concern of all citizens.

Representatives of such outstanding segments of the plant kingdom as the Rain Forest of the Olympic Peninsula, the Chetco Redwoods, the picturesque junipers as found in the Redmond-Bend Juniper Wayside, Quaking Aspen Swamp Botanical Area in the Willamette National Forest, the Kalmiopsis Wilderness in the Siskiyou National Forest, and many others have been placed under protective care. Less conspicuous but equally interesting types of vegetation have been accorded protection through Research Natural Area classification. "Reservations" of this type are considered ecological bench marks. As such, they are not recreation oriented. However, they do afford protection for specific plant types and communities. New additions, both as plant community references and recreational reserves, should consider native grasslands, the single-leaf pinyon pine area of southcentral Idaho, fields of native wildflowers, foothill and unique riverine vegetation. Particular emphasis should be placed on the fragile desert communities.

A treasure in the overall ecological scene presently threatened by pollution and destruction are the estuaries. The Puget Sound and the many bays have untold importance to fish, wildlife, and recreation. Developments that would alter the ecology may cost more than the citizens would be willing to pay if they were aware of all the possible consequences. Fortunately, public awareness in this matter has resulted in the formation of programs to evaluate the areas with the aim of establishing marine preserves and protection of the estuaries and tidelands before irreparable damage occurs.

Areas of Wilderness

The remote mountains, forests, and deserts contain remnants of natural America. Preservation of these provides an opportunity for self-reliant living and traveling in wild areas under primitive conditions. At the same time, scenic vista overlooks enable the less adventurous to see without intruding into the wild setting.

The region possesses such outstanding areas as Three Sisters Wilderness and Mount Jefferson Wilderness in the Cascade Range in Oregon, the Bob Marshall Wilderness in Montana, the Eagle Cap Wilderness in the Wallowa Mountains in eastern Oregon, and the Selway-Bitterroot Wilderness in Idaho. Coupled with these are the designated or potential National Wild and Scenic Rivers such as the Salmon and Clearwater in Idaho, the Rogue River in Oregon, and Skagit River in Washington.

Historical Resources

The Columbia-North Pacific Region has many irreplaceable landmarks of the past deserving of protection. These buildings, sites, and objects commemorate and illustrate the American heritage, provide a source of information for scholars, offer educational and cultural encounters, and in some cases esthetic assets.

The region encompasses all the lands which at one time comprised the Oregon Territory. It is the only region added to the United States following discovery, exploration, and occupation.

Prior to the white man's coming to the Northwest, Indians had inhabited the region for thousands of years. They probably migrated to the North American Continent from Asia by way of the Bering Strait and Alaska and slowly worked their way to all sections of the country. Those who remained in the Northwest are identified in two main groups. The coastal tribes lived

along the Pacific Coast and the river valleys near the coast, while the inland tribes lived along the inland river and on the plateaus.

Discovery and exploration of the Pacific Northwest emanated from the desire to find a passageway from the Atlantic to the Pacific Ocean. Early visitors to the region included Spanish, British, and Russian seamen. These early visitors found that the Pacific Coast afforded a much-sought-after commodity--furs. From this discovery came the first occupation of the Territory by white men. Several fur companies established posts such as Fort Astoria, Fort Vancouver, and Thompson Trading Post in the region and were forerunners in the settlement of the area.

Overland movement into the Pacific Northwest followed the explorations of the Lewis and Clark Expedition of 1805-1806 which reached what is now Ft. Clatsop National Memorial. Starting from points in Missouri, mainly Independence, the settlers traveled westward over what was to become known as the Oregon Trail. Upon arrival in Oregon Territory, often in a half-starved condition, the travelers received aid at the posts of the fur companies and later at the missions, such as the one Marcus Whitman established near Walla Walla and Spalding near Lewiston, Idaho. The trail itself was not clearly defined and had cutoffs and turnoffs which gave it a personality all its own. Yet remnants are clearly visible in Idaho and Oregon. Fort Hall, Fort Boise, and the Barlow road are points of interest connected with the trail.

The discovery of gold in the region in the mid-1800's brought with it not only the miners seeking gold but a stampede for the best town sites as well. As the gold seekers moved on, the towns were deserted, leaving only historic memories of the days that were. Jacksonville Historic District is a restoration of one of these old mining towns. Idaho City, Silver City, and Pierce were other towns associated with gold. In some localities, particularly in what is now Idaho and Montana, other minerals were discovered and added to the continued growth of the state. The Coeur d'Alene River is still a world-renowned silver-lead-zinc mining district.

The settlement of the Pacific Northwest was not without trials and tribulations. Spain, Russia, England, and the United States all claimed a stake in the Oregon country. Over the years the issue became one of where the north boundary line should be drawn. Spain and Russia having withdrawn, the issue remained between the United States and England. Settlement was finally achieved after arbitration by the German Emperor pursuant to the terms of the Treaty of Washington. The San Juan Island National Historical Park now commemorates these events.

Armed conflict came to the Territory, not between the claimants for stakes in the Pacific Northwest, but between the indians who inhabited the area and the white man, now commemorated at the Nez Perce National Historical Park. The natives sensed the threat the white man posed to their way of life. Treaties only moderately solved the problem. As peace came to one section, hostilities would break out in another. Only through superior force and large numbers did the white man prevail. Captain Jack, Chief Joseph, and Chief Lawyer are among the noted Indians of the period.

Archeological Values

The Archeological Problem

The study of the prehistoric occupants of the Columbia-North Pacific Region presents a series of special problems that are not encountered during the course of historical, geological, or paleontological studies of the same area. Archeology is a relatively new science, and its data are more extensive and complex than any of the older historically oriented sciences.

A single event, such as a war, the birth of a famous man, or the construction of a building, is noninterpretive in the archeological record. That is, the nature of archeological materials, coupled with the fact that the Indians left no written record, necessitates a processual rather than a particular approach to the interpretation of archeological data. The factual significance of these remains can only be discovered and interpreted by broad comparative studies across space and through time. The archeologist has to spend a considerable amount of time and energy gathering his data because, unlike other sciences, the gathering of archeological information destroys portions of its significance. In other words, once excavated, an archeological site can never be re-excavated. Whatever is lost during excavation is lost forever.

A problem of even greater concern is the loss of these unexcavated, even undiscovered sites, by water resource development projects. Much of the early habitation was along the waterways. These were the early transportation routes and food producing areas. Once inundated by a reservoir, these sites are not available for interpretation or public use. This is a serious problem because the archeologist has no chance for study and the public loses a point of contact with its past.

The People

Just how great the precontact populations of the Columbia-North Pacific Region were at this early period in the history of archeological research is an unknown question. From ethnographic and archeological accounts, it is known that most of these prehistoric cultures were concentrated near the coastal areas, and that they were comprised primarily of peoples who spent most of their time pursuing a hunting, fishing, and gathering subsistence pattern. By the time of European contact, most of the populations represented had attained a well structured relationship with their cultural and physical environments; that is, they managed to coexist reasonably well with their neighbors, and they were able to obtain food in sufficient quantities to allow some permanency in settlement in the more abundant food producing areas--a condition allowing for the development of more complex social, ethnological, and ideological systems in these areas. Such development was, of course, retarded in less abundant areas.

The Value of Archeological Sites

Information concerning prehistoric culture can lead modern anthropologists to the point of understanding general laws about the development of social and cultural systems. The accumulated knowledge about man, through time, has a significant and practical bearing on the direction that our own culture will take in the future. The manner in which man has worked out systems of interaction with his natural and cultural environment--his successes and his failures in these pursuits--offer modern man a choice of alternatives in the direction he is taking. This choice is unique in the more than one million years of human development.

Modern man has created a barrier between himself and the natural environment. Modern civilizations have become more specialized internally. To understand the ramifications of this trend toward internal specialization and external isolation, modern man must, among other things, discover the mechanisms of the man/environment equation. To even begin to answer these questions, we must acquire a knowledge of the past.

The public is interested in man's history. Generally, this interest is focused on national history. But as modern man moves into a "shrinking" world, his interests in history take on more of a multi-national focus. In fact, it is quite clear that nationalistic history tends to distort factual information and cause misinterpretation unless it is projected against the total human history. Modern scientific archeology is concerned with presenting this broader picture to the public. Without it, the public is not only being misinformed, but deprived of an important part of the knowledge necessary for successful cultural progress.

RELATIONSHIP TO OTHER PARTS OF THE STUDY

A direct relationship exists between this appendix and other functional appendixes of the total study report. Each relies in certain degrees upon others for supporting data and pertinent information to assume total report entity. This appendix in its projections of future needs for recreation relates to the appendixes for the land and water resources base as well as the other appendixes of the total report, such as Fish and Wildlife, Navigation, and Water Quality.

METHODOLOGY

To determine the projected needs for water and related land for outdoor recreation for the target years 1980, 2000, and 2020 requires the projection of the future demand generated by both the resident and nonresident population, a realistic estimate of the existing and potential supply of recreation resources and developments, and a comparison of the existing and projected supply with the demand.

The projected needs form the basis for the recreation plan and alternative programs for the region. Specific methodology is presented in the chapters relating to demand, supply, and needs.

Different recreation projections were made for the Type 2 studies in the Puget Sound and Willamette subregions. The Type 2 studies are based on different methodology, economic and population levels from those used in the Columbia-North Pacific and result in different estimates of demand and needs. In order to make a rational analysis of the Columbia-North Pacific Region as a whole that would retain consistency for each of the subregions, it was necessary to prepare data for Subregions 9 and 11 on the same basis as for the other subregions. Wherever possible comparable data were abstracted from the Type 2 studies and included in the Regional Summary as well as Subregions 9 and 11.

Determination of Recreation Demand

Recreation demand used in this report is an estimate of the quantity of participation in outdoor recreation activities which would occur if opportunities to participate were available. Recreation demand includes latent demand (unfulfilled) and active demand (use of existing resources). Each of the states in the region have prepared estimates of present demand and have made short-range projections. Year 1970 is common to all current state plans and has been used as a base for the region. The

several activities were grouped into two major categories: water related and other. The regional total was then projected to the target years through use of a TIM factor (time, income, mobility) utilizing regional population projections from Appendix VI and influence of market area population changes. Subregional demand estimates were established from the regional projections utilizing trends in use and effects of differences in the demand factors from the regional projections.

Recreation Supply

Resource Base

The supply of recreation land was determined primarily from the 1964 inventory conducted by the Bureau of Outdoor Recreation (BOR) for the nationwide outdoor recreation plan.

Recreation Facilities

The extent to which the basic resources have been developed was based on the 1964 inventory and supplemented by information on private enterprises collected by the National Association of Soil and Water Conservation Districts. In addition, data on future recreation developments were obtained from the recreation managing agencies, from state recreation plans, and Land and Water Conservation Fund projects submitted to the Bureau of Outdoor Recreation.

Special Areas

This category includes scenic highways and trails; wild, scenic, and recreational rivers; environmental corridors; wilderness and primitive areas; open and green spaces such as golf courses, stream banks, estuaries and ocean beaches, landscaped malls, etc., all of which are grouped as "special areas." These areas are important to a balanced recreation program, particularly for nature study and esthetic appreciation. They form an integral part of the total natural environment. In most cases, enjoyment of these areas involves values that transcend monetary evaluation. Such areas often provide widespread benefits on a national basis, therefore a specific demand was not computed for this category.

Recreation Needs

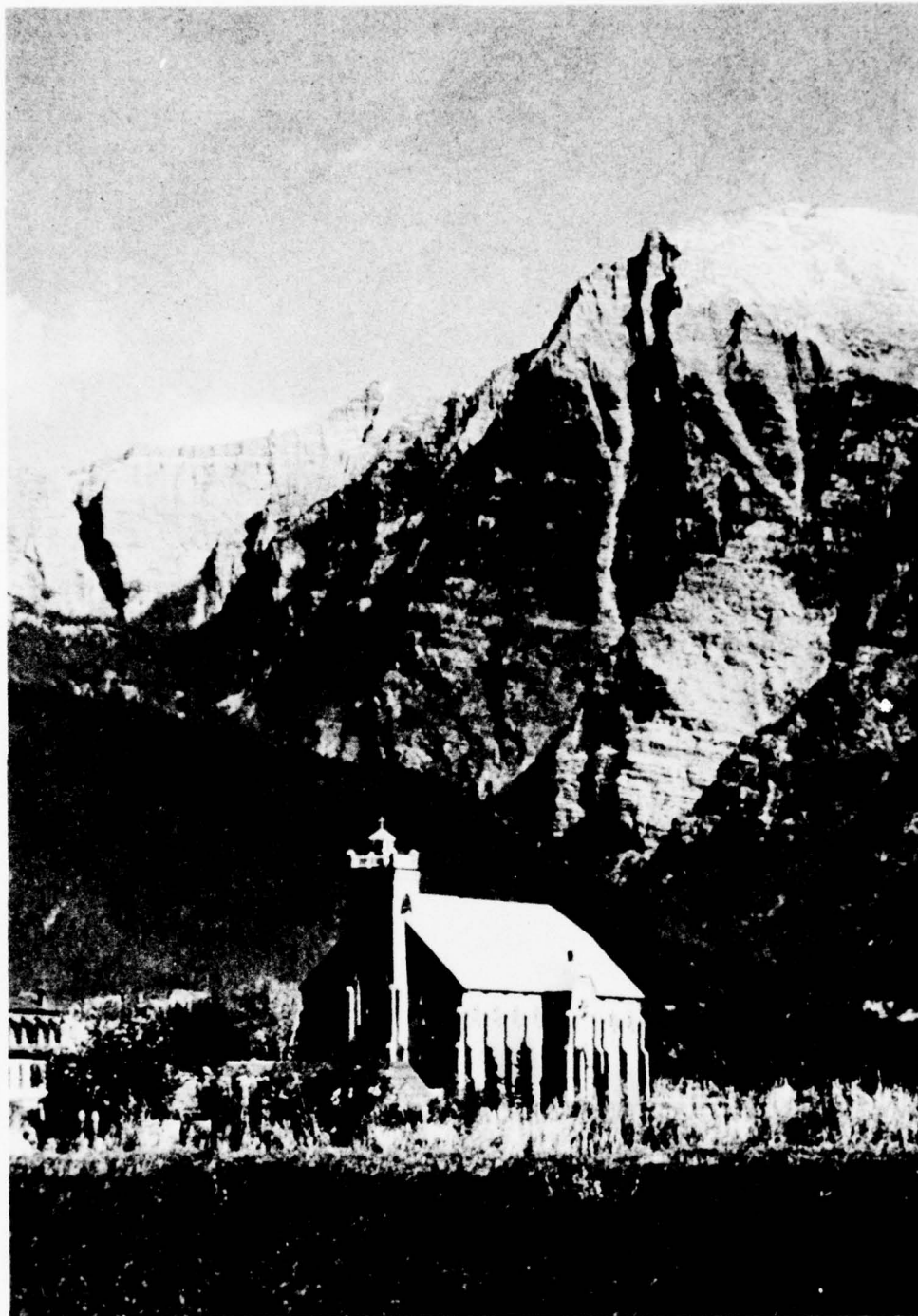
Recreation need is the difference between recreation supply and demand in terms of recreation days. Water related recreation needs were determined for 1980, 2000, and 2020 by comparing the 1970 level of development to projected demand.

The needs are expressed in recreation days to be satisfied and in acres of developed land and accessible water surface.

ASSUMPTIONS

Some important basic assumptions associated with the above methodology are listed below.

1. That recreation demand in a subregion is related to the region total on the basis of resident population and recorded recreation use.
2. That the states are in the best position to provide demand, supply, and needs information through the statewide planning process.
3. That most socio-economic factors affecting future demand will be similar to the national averages. Population change will be the most important factor that differs from the national average.
4. That the recreation mix of activities will not change significantly during the study period.
5. That a need exists for special areas such as scenic rivers, trails, wilderness, and scenic roads based upon their availability and quality. Demand for special areas is often widespread throughout the country and therefore resident population per capita rates are not the main consideration in determination of demand.
6. That the region will continue to be a net exporter of outdoor recreation in the future. (More people come into the region for recreation than those leaving to seek recreation outside the region.)



Nestled in the beautiful Mission Valley in Montana is the St. Ignace Mission founded over 100 years ago in a small rough-hewn log cabin. The present church was started in 1891 and is famous for its religious frescoes on its walls and ceiling. (Montana Highway Commission Photo)

REG-ONAL SUMMARY

REGIONAL SUMMARY

PRESENT STATUS

The Recreation SettingLocation

The Columbia-North Pacific Region occupies about 274,000 square miles of the northwestern portion of the United States. The region includes all of the Columbia River Basin in the United States, those basins in Oregon and Washington draining into the Pacific Ocean, the Straits of Georgia and Juan de Fuca within Washington and that part of the Great Basin lying in Oregon. It encompasses all of the State of Washington, most of Oregon and Idaho, that part of Montana west of the Continental Divide, and the small portions of Utah, Wyoming, and Nevada which are drained by tributaries of the Columbia River. Its area equals almost 8 percent of the conterminous United States.

Physical Features

There are eight major physiographic provinces in the region. Porgressing eastward from the Pacific Ocean, they are: the Coast Range, running north and south along the western edge of Oregon and Washington and including the Olympic Mountains; the Willamette-Puget Sound Trough, a series of valleys paralleling the Coast Range and extending from the Canadian border to the southern end of the Willamette drainage; the Cascade Range extending north-south through the entire west-central part of the region; the Columbia Plateau, spreading north and south from the Columbia River in central Oregon and Washington; the Blue Mountains, stretching in an arc from central Oregon into southeastern Washington; the Closed Basins in south-central Oregon which have no external drainage; the broad Snake River Plateau extending easterly from southeastern Oregon across southern Idaho and including parts of Nevada and Utah; the Northern Rocky Mountains which occupy a large area of northern Idaho and western Montana.

Possessing as it does these contrasting topographic features, the region offers an abundant variety of outdoor recreation attractions.

Adding to the diversity is the climate which is associated with the southerly and easterly movement of air masses from the Pacific Ocean. This general eastward movement of marine air tends to moderate temperatures, and associated winter storms deliver a large part of the total annual precipitation.

The topography of the Pacific Northwest, with its mountains, plains, and valleys breaks these air mass movements into patterns of varying temperatures and rainfall. Heavy precipitation occurs on the western slopes of the Coast and Cascade Ranges where annual totals of 200 or more inches have been recorded. In the Puget Sound-Willamette Trough between the ranges, precipitation decreases to about 35 inches. East of the Cascades, it again decreases, reaching lows of 10 inches or less in the central part of the region. Totals increase again to the east, reaching 60 or more inches in the mountainous areas of Idaho and Montana.

The range between high and low temperatures tends to increase with distance from the ocean. Along the coast, zero temperatures rarely occur, while east of the Cascades they are common. The same is true of 100°F. temperatures, which occur rather frequently east of the Cascades but very infrequently along the coast.

Each of the climatic areas, large or small, provides interesting and unique recreation attractions whether it is the rain forest of western Washington or the dry desert of southeastern Oregon and southwestern Idaho.

Cover

Cover types and the distribution of the different types also play an important part in the availability and distribution of recreation attractions.

Forest lands constitute 85.8 million acres, or 49.4 percent of the region. The major forest cover types are located in three general areas: Douglas-fir in western Oregon and Washington to the crest of the Cascade Range; ponderosa pine at the higher elevations east of the Cascade Range in Oregon and Washington; and Douglas-fir, together with lodgepole pine and other pine and true firs in the northern Rocky Mountain area. The forested areas which are located near the urban centers of the region offer a wide variety of year-round opportunities for recreation.

Rangeland, which occupies some 58.7 million acres, includes a large part of eastern Washington, eastern Oregon, and southern Idaho. Extensive recreation uses typify range areas but intensive use occurs on rangelands near water bodies and urban areas.

The 21 million acres of cropland in the region provide a variety of attractions such as hunting, fishing, sightseeing, etc. They also are important to the environmental quality of many areas.

Fish and Wildlife

Associated with the other natural resources is the great variety of fish and wildlife species that provides the outdoor recreationist an abundance of opportunity. Mammals common to the region range from small fur bearers to moose, elk, and grizzly bear. Birds include quail, partridge, pheasant, a wide variety of waterfowl and song birds, and large numbers of shore birds in the coastal subregion. Salmon and trout, the most popular fishes, inhabit many of the region's waters.

Population

In 1900, the population of the region was slightly under 1.2 million. Between 1900 and 1940, the population tripled, and by 1965 it was nearly 5.9 million. Between 1940 and 1950, the population increase was 33 percent and over the next decade 18 percent, as compared with national population increases of 14 percent and 19 percent for those two decades. Between 1940 and 1960 the annual rate of growth was 2.2 percent for the region and 1.6 percent for the Nation.

Population growth varied considerably between the subregions from 1940 to 1960. The Puget Sound Subregion had the highest growth rate, 2.75 percent; the Closed Basin the lowest, 0.56 percent.

Population densities vary from about 130 persons per square mile in the Puget Sound Subregion to only 0.7 persons per square mile in the Closed Basin. The population of the region, like that of the Nation, is becoming more concentrated in the urbanized areas. Whereas 23 percent of the region's population was classified as rural farm in 1940, only 8 percent was so classified in 1960. Between 1940 and 1960, the population in the Coastal, Puget Sound, and Willamette Subregions increased from 56 to 61 percent of the total regional population.

The patterns of growth and the distribution of the population have been and continue to be important factors in the demand for recreation facilities and are primary considerations of planning.

Access

Access to and within the region is generally an easy task because of the excellent network of highways, both state and Federal.

In addition to highways and railroads, water routes and air routes provide access to all major parts of the region. Highways and waterways are extensively used for recreation, both as access routes to recreation areas and as recreation attractions in themselves. With the development of scenic rivers and highways, this use will increase manyfold.

Diversity

The region's most important resource is its diverse recreational opportunities. From areas of wilderness to urban parks, the recreationist has a wide choice of opportunities for using his leisure. The forest lands, private and public, provide excellent areas for many types of outdoor recreation. The ocean shores and the many lakes and rivers provide ideal settings for water related recreation. Puget Sound is one of the leading boating areas of the United States. There are also several national parks and monuments which include some of the Nation's outstanding natural scenic wonders. Tourism, which has grown rapidly, depends on the recreation opportunities and use of the region's abundant fish and wildlife resources.

Water

The region has a total of over 2.5 million acres of fresh water surface as shown in table 1. This does not include the marine waters and estuaries. The recreation potential of the water supply depends on the type of water and its location, quality, distribution, accessibility, and convenience to the users. The two main categories are defined under the headings of "Water at Rest" and "Water in Motion."

Table 1 - Fresh Surface Water Resources by Subregion, Columbia-North Pacific Region

Subregion	Large Reservoirs ^{1/}		Lakes and Other Slack Water ^{2/}		Other Water Area		Total Water Surface
	(No.)	(1,000 Acres)	(No.)	(1,000 Acres)	Large ^{3/}	Small ^{4/}	
					(1,000 Acres)	(1,000 Acres)	(1,000 Acres)
1	30	335.1	63	58.3	58.2	60.6	512.2
2	17	223.3	28	19.6	45.2	30.8	318.9
3	6	16.0	4	1.2	11.3	12.9	41.4
4	25	196.2	6	22.1	48.4	28.0	294.7
5	36	121.1	3	0.7	48.6	37.5	207.9
6	8	59.8	11	6.0	14.7	28.6	109.1
7	17	149.2	15	11.9	8.8	36.4	206.3 ^{5/}
8	5	14.6	14	60.5	5.0	26.2	106.3 ^{6/}
9	19	35.7	12	53.4	17.3	72.4	178.8
10	9	5.0	22	32.1	117.3	67.3	221.7
11	20	45.3	69	47.2	8.1	40.5	141.1
12	1	2.9	13	152.2	.1	8.7	163.9 ^{7/}
Total	193	1,204.2	260	465.2	383.0	449.9	2,502.3

^{1/} Appendix V, Water Resources, reservoirs over 5,000 acre-feet capacity includes regulated lakes.

^{2/} Includes natural lakes and reservoirs over 100 surface acres and water surface of Lower Columbia River and Willamette River. This is based on map estimates.

^{3/} Includes lakes and reservoirs between 40 and 100 acres in size and streams over 1/8-mile wide.

^{4/} Water bodies less than 40 acres in size and stream surface less than 1/8-mile wide. Appendix IV, Lands and Minerals. In that appendix, these acres are included in the total land area.

^{5/} Acreage exceeds total in Appendix IV by 40,000 acres.

^{6/} Acreage exceeds total in Appendix IV by 6,600 acres. Portion of Columbia River added to lakes.

^{7/} Acreage exceeds total in Appendix IV by 91,700 acres. Based on map estimates.

Water at Rest - Recreation Opportunity In this category are included natural lakes, ponds, reservoirs, glaciers, and snowfields.

The lakes of the region number in the thousands and are widely distributed. A total of 260 major lakes and small reservoirs over 100 acres in size have been inventoried. Evidence of pre-historic and intermittent lakes is found in many arid places and offers opportunity to study important aspects of geologic and climatic changes, relics of long-gone civilizations rich in artifacts, and important minerals and rocks much prized by the growing number of rockhounds. The dry lake beds offer opportunity for speed contests for motorized land vehicles.

The mountain lakes are the most numerous. These lakes are the jewels of the high mountain country, adding much to scenic values. Many such lakes found in the alpine country either at or above timberline are located in a wilderness or near wilderness natural setting. The primary recreation activities occurring near such lakes include sightseeing, fishing, camping, and rest stops as a part of back-country travel. Because of the short growing season and low water temperatures at high altitude, the fish production of such lakes is sometimes limited. Mountain ranges of the region, containing an abundant supply of alpine lakes, are the Rockies, Cascades, and Selkirks. The lakes located in the Cascades receive the greatest use because of their proximity to large population centers.

The lowland lakes, farm ponds, oxbow lakes, and city park lagoons, because of their general location, easy access, and usable topography, are important suppliers of day use, water-based recreation activities for urban populations. This class of lakes also includes some of the municipal water supply reservoirs where water contact activities are often restricted. Recreation use of waters in this class where public access is assured is generally very intensive. Many smaller lakes are privately owned and public use is restricted, but the ones available offer picnicking, swimming, boating, fishing, and water skiing. There is substantial private investment in marinas, resorts, fishing enterprises, golf courses, and playgrounds which help to satisfy existing recreation demand. Lakes which are readily accessible to population centers are in high demand for year-round residences, making adjoining land values high. Privately owned farm ponds and small lakes have a potential to satisfy part of the demand for "put-and-take" fishery. The quality of waters in this class is extremely important since the level of use per surface acre is much greater than other classes and the percentage of water-contact activities is much greater. The oxbow lakes are usually found in the flood plain along major water courses through broad valleys and result from shifts in the main river channels. Due to their location, most oxbow lakes are near major routes of

travel and population centers. Marshes, swamps, and bogs of high wildlife habitat value are often suitable as outdoor museums for nature study, for hunting, and open space near or in urban areas.

There are 193 reservoirs with a capacity of at least 5,000 acre-feet storage located within the region that provide about 1,204,000 surface acres of water. These large reservoirs are scattered throughout the region and provide a wide range of opportunities for water related recreation. State and local parks in addition to Federal campgrounds are often located adjacent to the reservoirs.

Water locked in its solid state as ice or snow also is important to outdoor recreation. Located among the high scenic peaks of the Cascade and Rocky Mountains are over 80 percent of the remaining examples of the ice age glaciers left in the conterminous United States. Several of the glaciers are only a few miles by trail from surfaced roads, but most are accessible to only the hikers and mountain climbers. National Parks and National Forest Wildernesses contain many of the outstanding examples in the region. The glaciers and snowfields are primarily valuable during the summer recreation season, with sightseeing and outdoor photography by far constituting the greatest recreational uses. The glaciers are basic to the existence of many of the cirque lakes and water to maintain their levels.

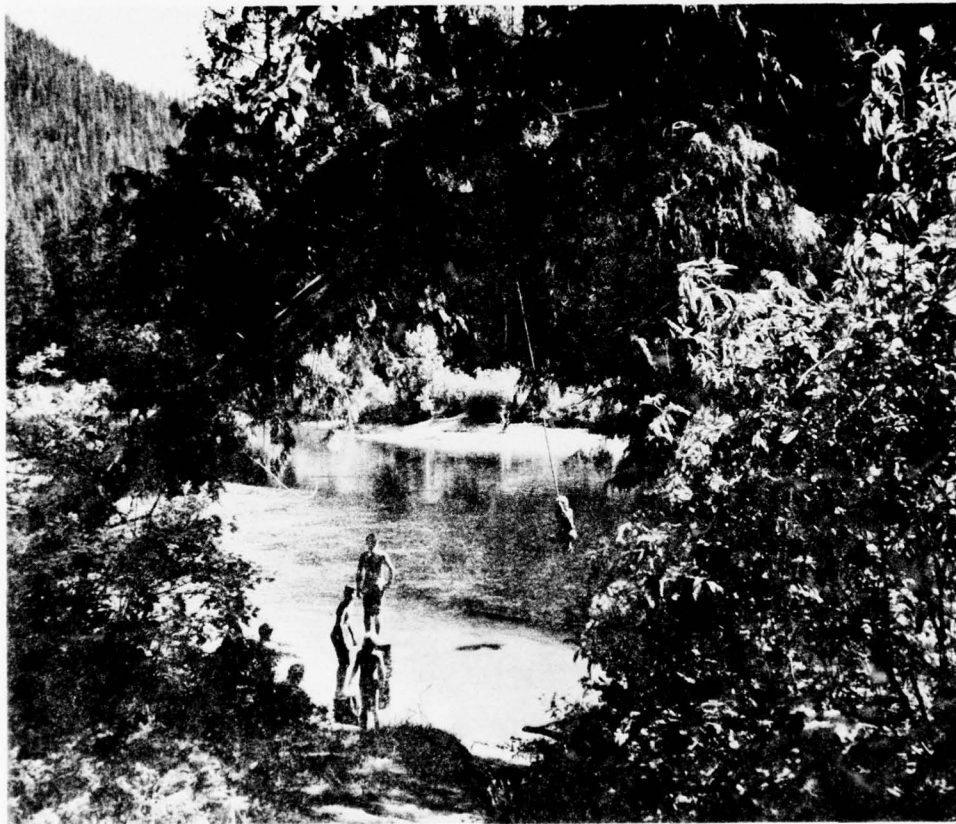
Skiing, sledding, snowmobiling, and backyard playing are other important uses of snow. Winter cross-country ski and snowmobile trips are increasing and with better and safer equipment snow camping is now beginning to become a winter activity. Many parts of the region offer a wide range of opportunity for winter outdoor recreation. Ice fishing and ice boating, very popular in the Midwest, are becoming popular in parts of the region.

In summary, the water at rest provides both summer and winter outdoor recreation for a wide range of activities. Its location, accessibility, and type set the stage as to its present uses. The regional supply is not a limiting factor, but location, access, and distribution limit capacity use.

Water in Motion - Recreation Opportunity In this category are included the rivers, streams, creeks, springs, and the ocean with its ebb and flood tides.

The numerous rivers of the region are generally of high quality. Most have their origin within the study area, offering a better opportunity for utilization of their potential. Some of the rivers are of national significance because of their wild, scenic or recreational character. The Wild and Scenic Rivers Act

(Public Law 90-542) established three of the region's rivers with five segments in the national system. In addition, the Act designates eight other rivers in the region for study and possible addition to the national system. The Act also encourages the states to establish state wild and scenic river systems. The importance of these rivers for their scenic, recreational, fish and wildlife, and other values are of major significance to the region and the Nation. There are many other rivers that may have potential and should be studied to determine their value as state or national rivers. The free-flowing rivers or segments thereof provide a wide range of outdoor recreation opportunity including fishing, float boating, motor boating, swimming, hunting, sight-seeing, photography, and nature study. Features of a river, such as waterfalls, rapids, cascades, or meanderings through the farm country, determine a stream's uniqueness. The estuarine areas of rivers are also of special significance to the environmental balance between fresh and salt water.



*The "old swimming hole" still in use along the Coeur d'Alene River near the Avery Creek Campground.
(Forest Service Photo)*

The smaller streams also have special value for outdoor recreation. While actual use of the water surface is limited to wading or occasional swimming, small streams enhance the landscape, provide important spawning and rearing areas for fish and habitat for upland birds, waterfowl, and other wildlife.

The irrigation canals and drains characteristic of the irrigated areas of the region can also provide opportunity for hiking, bicycling, open and green space, and wildlife habitat. Canals and drains passing through populated areas have a potential for a variety of recreational uses in addition to their primary purpose.

Navigation canals and locks serve to meet needs of recreational boaters as well as commercial vessels and in addition can enhance the shoreside opportunities for supporting facilities.

The tidal and estuarine areas of the region along the Washington and Oregon coasts are of very special significance in providing outdoor recreation opportunities. The fishing, clam digging, beach combing, surfing, sailing, sightseeing, and nature study that take place in the tidal areas, together with waterfowl and other marine bird life use, make the tidal zone one of the truly great regional attractions. The tidal pools and ocean waves hold a special fascination for old and young. These areas and estuaries of the Puget Sound, Columbia River, Willapa Bay, Grays Harbor, Nehalem Bay, Tillamook Bay, Coos Bay, Netarts Bay, Winchester Bay, and Yaquina Bay are some of the Nation's finest. Puget Sound contains areas of outstanding significance for the increasing activity of skin and scuba diving. Potential for underwater natural areas in the San Juan area of Puget Sound has been identified. Several underwater areas are suitable for marine parks or other special use.

Land Resources

Because of the abundant supply of water, much of the 271,430 square miles of land in the region is adjacent to or directly related to the water. Water adjacent lands are vital to recreation since they support base facilities and provide access to the water. Many recreation activities that do not directly utilize water surface are enhanced by being close to water.

Mountain and Alpine Lands Alpine and subalpine land areas of the region contain superlative scenery. Most of this type is found in the Cascade and Rocky Mountain ranges in the national forests and national parks and the unappropriated public lands.



Impressive coastal seascapes are but one of the attractions at Ecola State Park near Cannon Beach, Oregon. Many recreation opportunities are offered at ocean beach areas. (Oregon State Highway Department Photo)



Hikers pause above Glacier Lake in the Mission Mountains Primitive Area. Lakes and snowfields add to the scenic values. (Forest Service Photos)

Much of the high country is primarily valuable for recreation and much is inaccessible except by trail. Wilderness-type uses, including hiking, horseback riding, camping, fishing, hunting, sightseeing, photography, mountain climbing, and water activities, are dominant. The summertime season accounts for most of the use at the present time. The alpine lakes, glaciers and snowfields, springs, creeks, and waterfalls all contribute to the enjoyment of the users. In areas where roads provide access to the high country, sightseeing, driving for pleasure, picnicking, camping, berry picking, rock hounding, nature study, wildlife observation, and winter sports dominate the use.

Foothill Lands This type of land is characterized by extensive stands of timber and grazing areas and contains many of the lakes and reservoirs of the region. It includes much of western Montana, central and northern Idaho, and parts of Washington and Oregon. Many of the state parks and Federal recreation areas are located on this type of land. Scenic and recreation rivers are numerous, with a wide range of ecological zones. These areas support a large portion of the nonurban recreation use and include most of the more common activities such as water sports, camping, fishing, hunting, hiking, picnicking, nature studies, wildlife observation, winter sports, sightseeing, walking for pleasure, group camps, summer homes and cottages, motor bike riding, and nature study. The Federal Government manages much of this land, but substantial acreage is in state, large timber company, railroad, and small ownerships. A principal land use is timber production, but other uses, including recreation, mining, water storage, power production, and fish and wildlife are important. Often the uses are compatible, but some conflicts place land managers in difficult positions. Summer activities constitute the major recreation use, but winter sport uses are growing faster than the summer activities. Other group winter uses, such as camping and hiking, are also increasing.

The High Desert Low annual precipitation of 6 to 15 inches is characteristic. Vegetation consists of sagebrush, forbes, grasses, juniper, mountain mahogany, and associated brush species. Dry lakes, brackish lakes, and fresh water lakes are found in this zone. Many acres that were formerly desert are now in agriculture as a result of irrigation. The new agricultural lands may provide habitat for certain species of upland game if strips and patches of natural cover are included. Sightseeing and hunting are major recreation activities on the farmlands. The uses of the dry desert include hunting, sightseeing, rock hounding, hiking, motor biking, and historical and archeological study. Most of the dry land is in Federal or State ownership used principally for livestock grazing. The irrigated lands are in private ownership.

Coastal Lands This type of land is extremely important to support a wide range of activities at the beach and estuarine areas. Coastal land within a few miles of the ocean or estuarine areas may extend inland several miles to include the Puget Sound, Grays Harbor, Willapa Bay, and the Lower Columbia River. Most of these lands are in private ownership. Their value for outdoor recreation is reflected in the number of State, Federal, county, and municipal parks and the vast array of private recreation-oriented commercial developments.

BOR Land Class Definitions

The recreation inventory of the land in the region is based on the 1964 Bureau of Outdoor Recreation survey. Public land recreation character was reported in six classes listed in the ORRRC report. Definitions and examples of each of the classes follow. Private lands and some public lands were not included in the inventory (see table 2).

Class I - High Density Recreation Areas

Types of areas found in this class are often associated with urban populations and are usually oriented toward day-use activities. The key to classification is the intensity of use and development. Capacity per acre averages 3,000 recreation days annually and includes a wide range of activities such as playing games and sports, swimming (pool and lakes or beaches), and picnicking. Examples of Class I include the urban parks and play-fields found in Seattle, Portland, Spokane, Boise, and other cities.

Class II - General Outdoor Recreation Areas

Areas included in this class are found in a wide variety of locations throughout the region. They are often nonurban in character and include manmade developments. Most developed non-urban camping areas, boat launching areas, winter sports areas, etc., are included. Many of the recreation sites located near reservoirs and lakes are in this class. Included also is the acreage of immediate buffer zones around the developed area. Annual capacity per acre is about 250 recreation days. Overnight and vacation use is often associated with these areas. Examples include portions of many county, state, and national parks, campgrounds in the national forests, and other public lands, and developed sites near reservoirs and lakes. Some of the lands have potential for development to Class I intensity.



This photo of Wallowa Lake and Wallowa Mountains shows how class II lands such as the land adjacent to the lake containing a state park can be related to the class V land in the Eagle Cap Wilderness located in the mountain area. (Oregon Highway Department Photo)

Class III - Natural Environment Areas

Included in this category is the bulk of the national forests, parks, wildlife refuges, and other public lands. Developments are limited, with the primary uses including sightseeing, hiking, hunting, fishing, boating, canoeing, mountain climbing, and rock hounding. The annual use capacity is about one recreation day per acre. Some of the land in this class has the capability of becoming Class I or II by development of facilities. Some has the potential for shifts to Class IV, V, or VI depending on management direction.



Class III lands are natural environment lands used for many types of activities such as bird watching, nature photography, rock hounding. Developments are at a minimum. (Forest Service Photo)

Class IV - Outstanding Natural Areas

Areas in this category contain the superlative scenic, geologic, and natural features of the region such as mountain ranges, canyons, waterfalls, lava flows and caves, unusual timber stands, scenic rivers, and other natural phenomena. Examples include the Columbia Gorge, Salmon and Snake River Canyons, Lost Forest in Oregon, Bruneau and St. Anthony Sand Dunes, portions of the Cascade Range, parts of the Skagit and Rogue Rivers, the Chetco Redwoods, and portions of Yellowstone National Park. Development includes only those facilities necessary to protect the natural features. Activities include sightseeing, outdoor photography, and study of the natural features. Capacity varies from 20 to 50 recreation days per acre depending upon the accessibility and the type of resource.



Oregon Caves National Monument typifies a geological class IV area. There are many other excellent caves located throughout the region. Geysers, hot springs, and other geologic formations are included in this class. (Oregon State Highway Department Photo)

Class V - Primitive Area

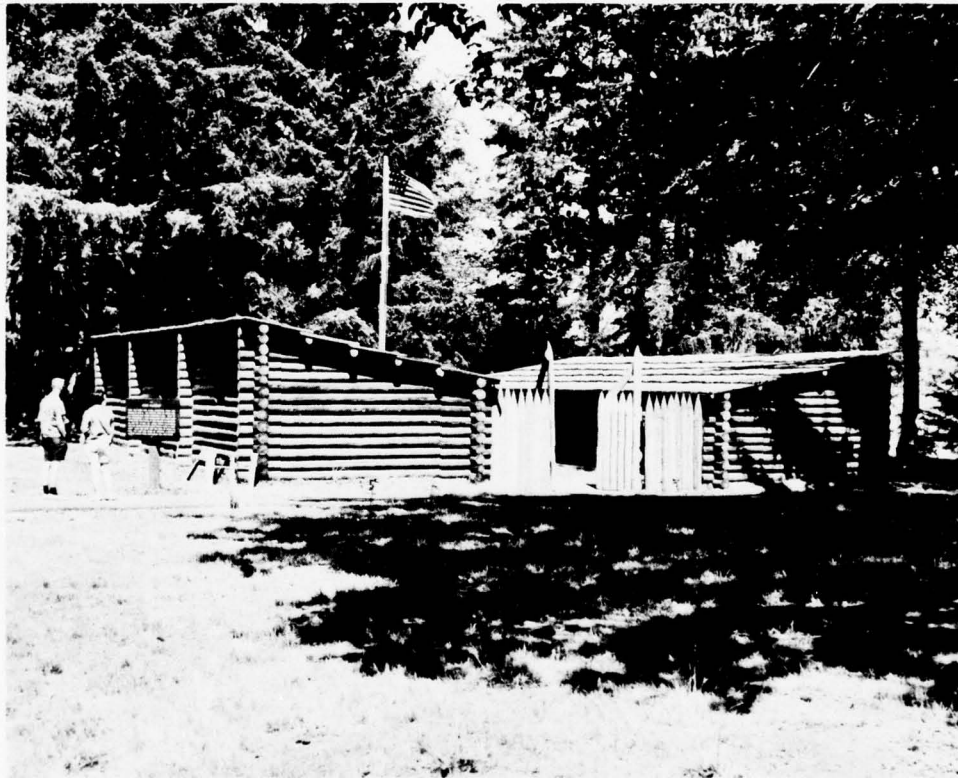
Areas in this class contain remote lands and designated wildernesses. The region contains about 40 percent of the National Wilderness System. Examples are the Bob Marshall, Pasayten, Selway-Bitterroot, Anaconda-Pintlar, Three Sisters, and Mt. Jefferson Wildernesses and Idaho, Sawtooth, Salmon River Breaks Primitive Areas. Manmade developments are minimized, consisting primarily of foot and horseback trails. Major uses are hiking, sightseeing, photographing, fishing, hunting, horseback riding, and mountain climbing. Boating is restricted to hand-propelled craft or float boats and rafts. Depending on the size of the area, use of less than one recreation day per acre annually would be optimum.



Class V-Wilderness offers opportunity for many activities such as this young mountain climber shown scanning Greywolf Peak in the Bob Marshall Wilderness. (Forest Service Photo)

Class VI - Historic and Cultural Sites

Sites in this class include those associated with the history, tradition, or cultural heritage of national, state, or local interest and are of enough significance to merit preservation or restoration. Sightseeing, outdoor photography, and study of history and prehistory are the primary uses. Since the sites are usually small in size, the annual use per acre may be similar to Class I sites when developed. Access, parking, and interpretation facilities are the primary developments associated with such sites. Examples found in the region include Fort Clatsop, Fort Vancouver, and Marcus Whitman national areas; state heritage sites; national historic sites; state areas such as Champoeg State Park in Oregon, Fort Columbia in Washington, Fort Casey, Washington; Cataldo Mission in Idaho, and numerous other memorials.



Class VI-Historic and cultural sites lend themselves to interpretation. This photo shows the site where the 33 members of the Lewis and Clark Expedition spent the winter of 1805-06. In 1968, Congress established the Fort Clatsop National Memorial under jurisdiction of the National Park Service. (Oregon State Highway Department Photo)

Existing Outdoor Recreation Resources

Lands identified by BOR classes as reported in the 1964 inventory, along with an estimate for all other lands are listed in table 2. Most of the noninventoried land is in private ownership. Much of the recreation lands in public ownership will be retained and will be available to support future recreation demand.

Table 2 - Summary of Lands by BOR Classes,
Columbia-North Pacific Region, 1964

<u>Class</u>	<u>Federal</u>	<u>State</u>	<u>County</u> (1000 acres)	<u>City</u>	<u>Private</u> ^{1/}	<u>Total</u>
I	4.93	1.15	1.18	10.58	-	17.84
II	479.36	398.19	22.27	11.80	-	911.62
III	75,959.14	2,512.15	10.15	13.16	-	78,494.60
IV	2,916.90	17.22	0.43	0.40	-	2,934.95
V	8,373.01	49.66	0.51	0.47	-	8,432.65
VI	40.87	1.54	-	.02	-	42.43
<hr/>						
Total						
Classed	87,774.21	2,979.91	34.54	36.43	-	90,825.09
Not						
Classed	7,844.49	5,472.39	452.86	441.67	68,678.80	82,890.21
Grand ^{2/}						
Total	95,618.70	8,452.30	487.40	478.10	68,678.80	173,715.30

^{1/} Includes Indian Reservations.

^{2/} Total land area by ownership, Appendix IV, Land and Minerals Resources.

The lack of consistency between the many different agencies contributing information in the recreation inventory and the lack of information on the private lands are limitations in the use of these data. Breaking the inventory data down into the subregions made the task more difficult and required some arbitrary decisions. Despite these shortcomings, these data were found to be the best available for the region.

Over 78 million acres are included in natural environment-- Class III. This large reservoir of land contains sites which have potential for development and conversion into Class II or Class I which would increase the present estimated annual capacity manyfold. Only 17,840 acres are included in Class I and 911,620 in Class II. The greatest amount of annual use now occurs and is likely to continue on lands in these two classes.



The 40 national forests in the region offer a wide range of nonurban recreation opportunities for both summer and winter use. (Forest Service Photo)

Of the 90.8 million acres of public lands inventoried, only a small percentage is presently developed for specific types of public recreation. The Federal Government administers about 90 million acres of land in the region. The 54.4 million acres contained in the 40 national forests in the region include over 1,600 campgrounds, 200 organization camps, thousands of miles of hiking and horseback trails, and 23 wildernesses and primitive areas which contain over 6 million acres. There are 49 developed winter sports areas under Forest Service permit and many miles of scenic drives and free-flowing streams.

The National Park Service administers 3.4 million acres of land included in seven national parks, three national recreation areas, two national historic sites, two national monuments, two national historical parks, and one national memorial. All of the national recreation areas provide opportunity for water-associated activities and three of the parks have limited winter sports areas.

Bureau of Reclamation reservoirs provide a major source for water based recreation in the Columbia-North Pacific Region. The Bureau has about 55 reservoirs with approximately 395,000 surface acres. About 9 million recreations visits were recorded in 1969. Administration of recreation at most Bureau reservoirs is by agreement with other Federal agencies and with local, county, and state interests.



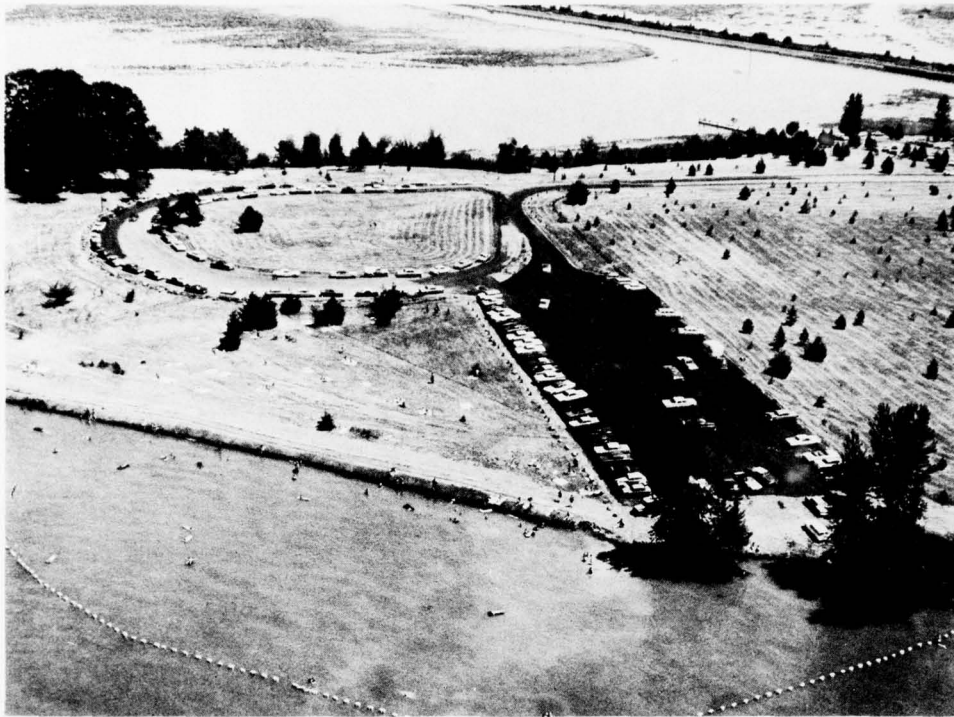
Glacier is but one of seven national parks within the region. The National Park Service also administers ten additional areas. The interpretation program is very popular with visitors. (National Park Service Photo)

There are 29.5 million acres of land under jurisdiction of the Bureau of Land Management. Outdoor recreation use is encouraged on all lands but lack of development, access, and public awareness has limited use primarily to activities such as sight-seeing, hunting, fishing, and rock hounding. In 1968 there were 81 developed recreation sites, many of which offer water related recreation opportunity. The Bureau of Land Management is currently evaluating the potential of these lands for the purpose of preserving and enhancing the recreation opportunities.

Under its civil works function, the Corps of Engineers constructs numerous water resource development projects which are important suppliers of water-based recreation. During 1969 there were 22 multipurpose reservoirs within the region offering approximately 337,000 acres of water surface for recreation. In addition, the numerous flood control, streambank protection, small boat harbor, and potential shoreline protection projects will support significant recreation use and development. Much of the land adjoining the reservoirs is or will be classified for recreation development. The developed recreation areas are being operated by the Corps of Engineers, other Federal agencies, and local government.



Rock hounding and enjoying the natural environment are popular uses of the public lands. The Bureau of Land Management has jurisdiction over about 30 million acres in the region. (Oregon State Highway Department Photo)



This view of Perkins Peninsula shows one of the many excellent recreation sites developed by the Corps of Engineers. Many of these sites are operated and maintained by state and local government recreation agencies. (Corps of Engineers Photo)

The Bureau of Sport Fisheries and Wildlife administers 36 national wildlife refuges and 13 national fish hatcheries in the region, ranging in size from Oregon's 240,000-acre Hart Mountain Antelope Refuge to 5-acre Copalis Refuge in western Washington. The primary purpose of the refuges is to protect the wildlife, although many offer recreation opportunities of camping, picnicking, hunting, fishing, and nature study. The fish hatcheries furnish fish for stocking lakes, streams, and reservoirs. They are visited annually by large numbers of people to observe hatchery operations.

The Federal Power Commission actively encourages and requires consideration be given to development of the recreation potential of licensed power projects.

The many state agencies involved in outdoor recreation include state parks, highway departments, fish and wildlife agencies, state forestry departments, and state land departments. A total of 1,354 separate areas, including 3 million acres, was reported in the 1964 Bureau of Outdoor Recreation inventory. Of these, state parks accounted for over 300 areas with about 150,000 acres.

Most of the cities and counties have active park and recreation programs. A total of 397 areas with 34,500 acres has been reported for the counties.



"Sand buggies," modified four-wheel drive vehicles, roll over the impressive sand dunes, part of which are in the Honeyman State Park on the Oregon coast. The state parks are important suppliers of recreation opportunity throughout the region. (Oregon State Highway Department Photo)

Many municipalities within the region have active outdoor recreation programs. The larger cities have been increasing their efforts to meet critical urban needs. The inventory includes 1,343 municipal areas with 36,400 acres. Despite the limited acreage under jurisdiction of the county and municipal levels of government, a total of 28 percent of all 1965 reported recreation use occurred on these sites.

The location and distribution of the existing recreation resources are shown on the present status maps in each of the subregion chapters.

Facility Development

Some of the recreation facility development that has taken place in the region is listed in table 3. There are many other types of facilities but due to the lack of inventory data they have not been included. This list serves to point out the extent of the major types of facilities. Most information listed under the private developments was taken from published guides. The remainder of the data was taken from the Bureau of Outdoor Recreation inventory.

Table 3 - Facility Development,
Columbia-North Pacific Region

Facility	Item	Fed.	State	County	Mun.	Total Public	Private	Total
Camping								
Tent	Acres	8,336	3,391	404	105	12,236	-1/	12,236
	Units	15,939	8,004	1,485	529	25,957	-	25,957
Trailer	Acres	2,804	1,268	155	60	4,287	-	4,287
	Units	5,479	1,451	617	474	8,021	11,359	19,380
Group	Acres	1,566	1,879	105	307	3,857	-	3,857
Picnicking	Acres	5,458	4,483	1,498	2,156	13,595	-	13,595
	Units	9,566	12,009	7,441	9,904	38,920	-	38,920
Marinas	Number	121	30	100	40	291	NA ^{2/}	291
	Slips	1,317	1,095	67	1,040	3,519	NA	3,519
Winter Sports	Number	48	1	-	-	49	16	65
	Lifts or Tows	293	7	-	-	300	47	347
Swimming Beaches (Organized)	Acres	194	1,882	230	430	2,736	NA	2,736
Parks and Playgrounds	Number	44	37	79	529	689	-	689
	Acres	341	149	529	2,707	3,726	-	3,726

Source: BOR 1964 inventory, reports of State and Federal agencies and 1969 Rand-McNally Trailer Guide.

1/ - Not Reported.

2/ NA Not Available for all Subregions.

It is estimated there are over 850 private outdoor recreation enterprises in the region. Many of these rely on outdoor recreation for primary income, but many others have other business interests such as farming, forestry, power production, or resort operations.

Most of the private power companies, large timber companies, railroad companies, and many large ranches allow the public use of their lands and waters for recreation.

There are 4-1/2 million acres of Indian lands containing all types of land use from irrigated farms to alpine slopes. Fifty-nine recreation areas are found on Indian lands ranging from primitive camping sites to reasonably modern facilities, such as Kah-nee-ta on the Warm Springs Reservation in Oregon.

Recreation development on Indian lands is ordinarily done by the Indians themselves, with technical advice from the Bureau of Indian Affairs and other Federal agencies as requested by the Indians. Recreation development on reservations is usually limited to projects bringing direct economic benefits to tribal members.

Recreation Use

Table 4 lists the results of a survey of the major recreation administering agencies to determine the magnitude and density of existing use of the recreation resources. The purpose of this survey, completed in the fall of 1966, was to obtain data from a wide range of sources, both public and private, as a basis for projecting the use to year 1970. Since it was not possible to survey all the private operators, the Chilton Survey was used as a guide for estimating the total use except for hunting and fishing which is the difference between the sum for public agencies and the total as shown in Appendix XIV. This table is not meant to infer that the land administering agencies have direct responsibility for hunting and fishing activities. Data were collected and estimated for each of the subregions for 1965.

The data were collected from those agencies responsible for operation of individual recreation sites and therefore use of the water surface of reservoirs under the jurisdiction of the Bureau of Reclamation or the Corps of Engineers was listed under the agency responsible for management of the access site.



Private dude ranches supply an important need to the total recreation. Resorts, motels, and private campgrounds all help to lessen the load on public areas. (Montana Highway Department Photo)

Table 4 - Recreation Use, Columbia-North Pacific Region, 1965

Land	Administering Agency	Swimming	Water		Fishing	Picnick-Sight- ing		Hunting	Other	Total
			Boating	Skiing		Camping (1,000 Recreation Days)	seeing Sports			
	Forest Service	315	290	165	3,415	2,370	2,455	6,910	2,001	1,265
	Bureau of Land Management	52	137	60	959	312	542	3,228	46	1,290
	Bureau of Reclamation	7	8	46	-	17	11	877	-	-
	National Park Service	301	468	90	194	890	1,776	6,491	14	5
	Corps of Engineers	130	215	35	230	45	230	3,065	-	10
	Bureau of Sport									25
	Fisheries and Wildlife	1	32	18	151	21	81	410	-	36
	Other Federal	20	28	5	206	16	79	197	-	16
	State Agencies	4,103	933	747	3,392	2,601	9,151	13,165	254	868
	County and Municipal	5,746	1,403	171	1,478	770	17,406	4,667	-	61
Private		3,512	1,123	427	6,281	2,287	10,468	12,387	2,000	6,217
Total		14,187	4,637	1,764	16,306	9,329	42,199	51,397	4,474	10,504
										39,897
										194,694

The influence of factors affecting demand may be observed through analysis of active demand represented by actual use. While use does not approach total demand (desire by people to participate), the active demand does indicate a measure of the trend of total demand.

Longstanding records of visits to many recreation areas are somewhat limited. Those that are available, however, show one thing in common--a continuous upswing in usage.

Public Areas

On a national as well as regional basis, a phenomenal record of increasing attendance has been established. These data are considered to be representative as well as indicative of the continued upward trend.

Nationwide, recreation visits to areas under jurisdiction of the National Park Service increased from 2 million visits in 1925 to over 150 million in 1968. During this same period, visits to recreation areas within the national forest system increased from 5.6 million to about 180 million. Visits to BLM areas increased from 15 million in 1963 to 57 million in 1968.

At water resource development projects nationwide under jurisdiction of the Corps of Engineers, recreational attendance has surged from a total of 5 million visitors in 1946 to over 227.4 million during 1968. This use is predominately water associated.

The Bureau of Reclamation, also administering water resource development projects located in Western United States, noted water related recreational usage increasing from 19.5 million in 1958 to 44.9 million in 1966.

State park systems exhibit similar tendencies. Over 320 million visitors in the United States were recorded for 1968 as compared to 70 million in 1942.

Another indicator of the rise in popularity of outdoor recreation is shown by the increase in sales of hunting and fishing licenses. During the period 1935-1965, national sales jumped from 11 million to an estimated 44 million.

There is ample evidence that the increase in the number of pleasure seekers wishing to use the outdoors will continue. Even the highest predictions of future recreation use have been found to be conservative. In 1960, the Outdoor Recreation Resources Review Commission, based on a national survey, predicted that the

number of recreation occasions would increase 20 percent between 1960 and 1965. The 1965 survey conducted by the Bureau of Outdoor Recreation (23) revealed that the increase was actually 51 percent. The United States population 12 years and older increased only 8 percent during this same time. Therefore, people participating at a greater frequency are responsible for the higher participation rates. The varying effects of changes in per capita income, population distribution, more leisure, development of facilities, and access are reflected in the change in rate of participation in different recreation activities. The 1965 survey predicts that water related activities will be the fastest growing of all 16 summertime activities. Water skiing, camping, swimming, boating, and hiking will have the greatest rate of change.

Private Areas

The estimates of use of private facilities are based on the information contained in the Chilton Survey of 1964 which reviewed private recreation enterprises throughout the United States. Other information was obtained from the National Association of Soil Conservation Districts' inventory of outdoor recreation on private lands. The regional total use of private areas estimated for 1965 was 55,143,000 recreation days. This represents about 28 percent of all recreation use for the survey year.

Value of Outdoor Recreation

Tangible

A recent study coordinated by the Bonneville Power Administration, entitled Pacific Northwest Economic Base Study for Power Markets, Volume II, Part 9 (22) includes an evaluation of outdoor recreation and tourism. The results of this study indicate that about \$900 million was spent in 1964 in the Pacific Northwest by tourists. Of this total, about \$331 million was credited to nonresidents. The equivalent of 100,000 workers are employed in the region in jobs which stem directly and exclusively from tourist spending, making this industry the fourth largest and probably the fastest growing in the Pacific Northwest. Of the estimated 100,000 tourist industry workers in the region, 53,000 have jobs in business establishments which sell directly to the tourist consumer, while the remainder are employed in supporting enterprises.

Recreation expenditures in the region have been increasing at faster rates than the expansion in the national average. Recreation tourist dollars spent in the region stimulate a relatively

high multiplier which, because of the chain of spending and respending created, further augments employment and income. For instance a study of Teton County, Wyoming, indicates that in 1967 the multiplier of tourist dollars was 5.3 (1)

The regional total demand was allocated to the subregions on the basis of 1965 use reported as shown in table 3. This allocation is based on the premise that use is directly related to the economic activity. It is very possible that in Subregion 10 there is a greater proportion of private recreation enterprises than in other subregions. However, the scope of this study limits detailed analysis. When more detailed studies are undertaken, it will be possible to provide better information on the economic value of outdoor recreation.

Intangible

"Communities should be planned with an eye to the effect upon the human spirit by being continuously surrounded with a maximum of beauty." Thomas Jefferson

The intangible values of outdoor recreation are not measurable in dollar market value. They include natural scenery: clean air; cold, unpolluted streams; the relationship between man and nature; opportunity to expend excess energy; and relief from urban congestion, noise, tension, and a fast-pace existence. In short, outdoor recreation intangibles comprise a major portion of a high quality environment.

As the Pacific Northwest per capita income and population increase, there must be increasing emphasis upon plans and programs to maintain and improve a high quality environment. With increasing nationwide affluence and mobility, individual citizen choices concerning a place of residence will be based increasingly upon "environmental quality" of the area rather than upon "economic opportunity"--the primary determinant in the past. An increasing number of citizens likely will choose to reside in the Pacific Northwest.

Appendix VI, Economic Base and Projections, indicates that the region's population will increase from 6,277,000 with a per capita income of \$3,072 in 1970 to 12,680,300 with a per capita income of about \$12,000 (1958 dollars) in 2020. This represents a 102 percent increase in population, a 291 percent increase in per capita income (1958 dollars), and a 700 percent increase in total personal income (1958 dollars).

It is obvious that such vast changes in the economy of the Northwest will require proportionately vast expenditures for planning, preservation, and development of the esthetic and intangible, as well as the tangible, outdoor recreation resources if the environmental quality of the Northwest is to be both fully protected and enhanced.

Although there is no agreed-upon method of placing a dollar value upon the benefits of such intangibles as scenery, the costs of preserving or enhancing the esthetics can be determined. First, there is the cost of such items as land acquisition, landscaping, and special water or related land project or program design necessary to mitigate any environmental quality losses due to project or program implementation. Such measures are absolutely essential if future degradation of environmental quality is to be avoided. They must be considered the least-cost alternative. In addition, if the aspirations of an increasing population are to be fulfilled, considerable additional protection of existing intangible values will be necessary. This can be accomplished with programs to provide open spaces and green spaces near urban centers; scenic corridors along roadways and waterways; design, spacing, and landscaping of all structures to conform to the natural setting; and preservation of wild and scenic rivers, unique natural areas, wilderness areas, historic and cultural values.

The cost of programs to protect these intangible values may also be determined, either in direct costs or in indirect costs of potential values foregone, such as timber unharvested, ore unmined, or potential hydropower undeveloped. It might be possible to justify these programs on the basis of long-term benefits to our society as a whole. They are essential if increases in material wealth of our citizens advance in unison with the quality of life. We have the knowledge and the resources to have both, up to a point as yet undetermined. However, first must be discarded the short-term, least-cost economics that guided development of the Nation's material wealth but sacrificed much of the environment in the process. There must be substituted long-range planning and long-range economics geared to man's aspirations for an increasingly high quality and more meaningful existence.

Problems

Since outdoor recreation involves the management of lands and water as well as people, the problems that result are both varied and complex. The underlying problem is that of achieving a proper balance between the needs and desires of the people and the protection of the resource for future generations.

Competition for Water Related Lands

Lands adjacent to water are desirable for outdoor recreation and are often the ones sought for residential and, in some cases, for industrial uses. The competition for such land results in the escalation of costs of waterfront land and often precludes the purchase of such land for public use. Public access to lakes, streams, and sometimes reservoirs for recreation use is often restricted by private ownership. Obtaining the right of public access is becoming a major problem in many of the urbanized areas of the region.

Preservation of Free-Flowing Streams

There is a need to maintain certain rivers in their free-flowing state because of their scenic, esthetic, and natural recreational values. Some rivers in the basin have been identified as having national or state significance. Development of a multi-purpose storage project, while providing additional opportunities for certain types of recreation use, often destroys existing natural values for all time. Careful evaluation of each proposed project is essential in order to prevent unnecessary impairment of irreplaceable values. Headwater impoundments properly operated can often enhance stream recreation by flow regulation.

Competition Between Recreation Uses of Water

Competition is developing for use of the surface of many natural lakes, reservoirs, and, to some extent, the rivers of the region. Conflicts arise between general boating, water skiing, sport fishing, swimming, sailing, and those seeking peace and solitude of the waterside. With the tremendous increase in the number of power boats, problems are becoming severe at many water bodies, especially the smaller ones. One possible solution is to zone the water surface, but this creates problems of enforcement. Another possible solution is to set aside certain lakes and reservoirs for specific uses.

Overuse, Misuse, Vandalism, and Pollution

Many of the better known recreation sites are currently being overused; and as a result the natural environment is suffering. The lack of suitable nearby land to accommodate the overflow crowds compounds the problem.

The lack of understanding of natural environment and simple ecological relationships by many of the outdoor recreation users as well as the planners results in misuse of many sites. The destruction of vegetation because of congestion or traffic and failure to realize the long-term aspects of misuse require great expenditures of funds and manpower each year for repair, cleanup, and replacement.

A small percentage of recreationists mutilate or destroy facilities and natural attractions, spoiling recreation areas for the majority. Law enforcement and citizen support are needed to reduce vandalism.

There is danger of water pollution where the public is using undeveloped recreation areas. As the use of such sites increases, the danger intensifies. Disposal of wastes from pleasure boats into the water is a problem that is and will continue to be more serious. The development of adequate facilities for disposal of wastes from boats and house trailers' holding tanks would help to eliminate this problem. Little progress has been realized to meet this problem although some starts have been made.

Financing

One of the most pressing and serious problems is financing outdoor recreation development, and most programs are behind demand schedules at the present time. Development planning on public lands far exceeds accomplishments. Financing for the construction of recreation facilities is not keeping up with the demand. Often local government agencies are unable to meet matching grants from state and Federal sources for acquisition and development of recreation resources. The recent increase in funding issues for outdoor recreation and open space may indicate the future trend. Despite the most vigorous efforts to keep up with the surging demand, the lag is still very evident.

Lack of adequate funding for Federal agencies has also affected the programs of these agencies to keep up with the increasing demand. Delays in funding recreation development results in increased costs for maintenance at over-crowded areas and site deterioration.

FUTURE DEMAND

Recreation demand in the region is influenced by the same socio-economic factors that underlie national demand. The degree of difference in these factors between the region and the Nation is slight; where there is a difference, the trend indicates a narrowing of the gap. Essentially, the really important demand-

inducing factor not changing uniformly throughout the Nation is population. Another factor that sets this region apart from other regions of the country is the abundant supply of recreation resources with a lower proportionate population.

The current statewide outdoor recreation plans for the states of Oregon, Washington, Idaho, Montana, and Wyoming were used to obtain the estimated demand for 1970.

To meet objectives of this study recreation information has been adjusted to 1970, as the base year for future projections. Total recreation data have been apportioned as follows between "water related" and "other", to focus attention on water related recreation demand, development needs, and means to satisfy those needs.

1. Water related recreation - Activities dependent on water: boating, fishing, water skiing, skin diving, swimming, and waterfowl hunting activities and a percentage of the land-based activities often associated with water: camping, picnicking, nature walks, and sightseeing. Forty-three percent of the swimming takes place in natural water areas or impoundments.

2. Other recreation - Land-based activities such as hiking and other back-country uses, rock hounding, horseback riding, hunting, winter sports, and mountain climbing. Also included are activities which are dependent on facilities rather than the resource for enjoyment and are often found in or near the urban areas; 56.7 percent of the swimming (in pools), playing outdoor games, spectator sports, walking for pleasure, outdoor concerts and drama, bicycling, portions of total picnicking, and nature study.

Recreation demand was projected for the years 1980, 2000, and 2020 through use of the TIM factor (time, income, mobility) and regional population projections, Appendix VI, and influence of market area population changes in the region. Nonresident tourist use was incorporated from data from the state plans. Stanford Research Institute growth factor tables for projection years were used as the basis of estimates for future years as shown in figure 1.

Recreation activities making up water related demand are presented in table 5. The regional demand was allocated to each subregion on the basis of the percentage of the recreation use inventoried for a specific subregion as compared to the total regional use. This percentage was held constant for the future years due to lack of data on which to alter the percentage.

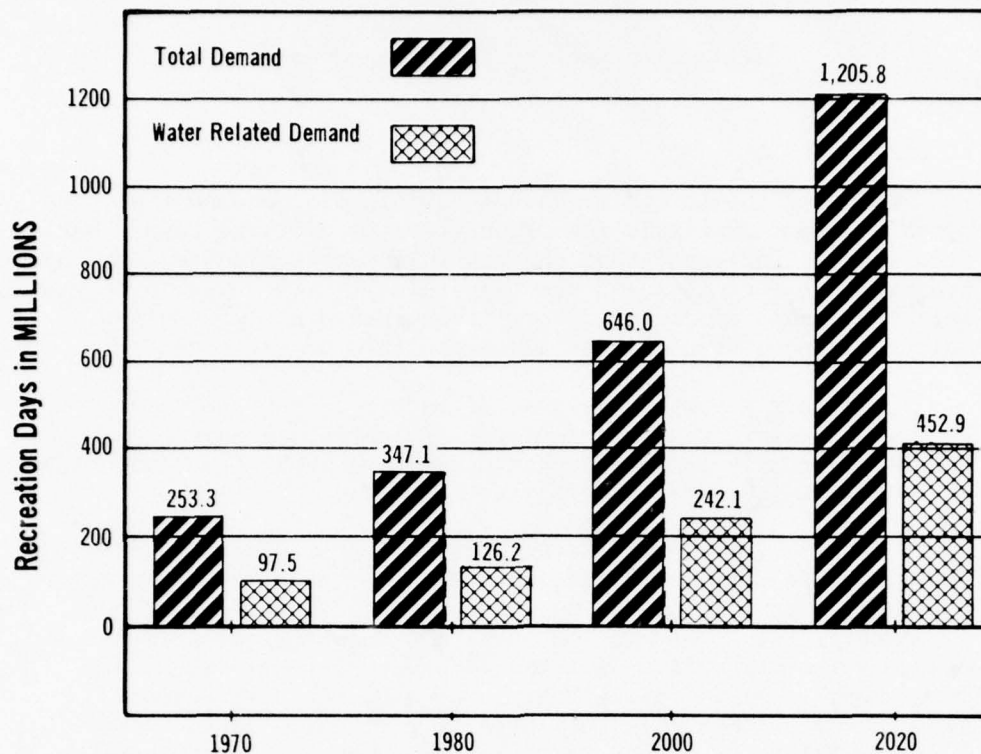


FIGURE 1 Expected Growth of Recreation Demand C-NP Region

Table 5 - Projected Demand, Water Related Recreation,
Columbia-North Pacific Region

Activity	1970	1980	2000	2020
	(1000 Activity Occasions)			
Boating	39,347	55,831	111,269	214,231
Water Skiing	4,324	5,454	10,670	20,194
Swimming	31,959	40,313	78,867	149,260
Fishing	16,306	22,662	30,059	39,135
Sightseeing	54,330	68,532	134,074	253,741
Picnicking	43,051	54,304	106,239	201,061
Camping	28,200	35,570	69,589	131,700
Other ^{1/}	26,132	32,962	64,485	122,842
Total Activity Occasions	243,649	315,628	605,252	1,132,164
Total Recreation Days ^{2/}	97,500	126,200	242,100	452,900

^{1/} Other activities include nature, walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day (rounded).

Trends in Factors Affecting Demand

Income

One of the most significant factors is the amount of disposable income available for expenditure on a discretionary basis. Studies have indicated that changes in income influence both the frequency of occasions and the types of activities people engage in. The amount of discretionary income based on 1960 dollar values has more than tripled since the turn of the century.

Another important measure of income is conversion of per capita disposable income into terms of the family unit. Average income per family and unattached individual in 1964 was about \$7,000 remaining after Federal income tax.

Of special significance to recreation demand is the fact that discretionary income (i.e., personal income remaining after taxes and expenditures for basic needs such as food, clothing, and shelter) now accounts for about one-third of all personal income. The percentage of total income that is discretionary income has remained fairly constant during the past several decades; but with the recent surge in per capita income levels, this percentage is likely to increase. Much of the increase in boating, skiing, snowmobiling, and other high cost activities is directly related to the income factor.

Leisure

Of comparable importance to income in determining demand is the amount of leisure which is also often directly related to income above certain levels--longer vacations, more paid holidays, etc.

The average length of work week is an indicator of the amount of nonwork time available to the wage earners and thus the time available for recreational pursuits. A dramatic change has occurred during the past century. In the 1850's, the average work week was about 70 hours and much of the factory work consisted of 12-hour shifts, 7 days per week.

Historical events such as industrialization during World War I, the formation of labor unions in the 1920's, the depression of the early thirties, the Fair Labor Standards Act of 1938, and the abrupt changes in labor immediately following World War II all have shortened the work week. Today, in some industries and offices, many workers enjoy 35 to 37-1/2 hour weeks. An important element which is reflected in the reduction in average hours of

work per week and which has a profound effect on outdoor recreation demand is the introduction, spread, and lengthening of paid vacations and holidays. In 1962, fully 99 percent of all office workers and 95 percent of all plant workers were employed in establishments having provision for 2 weeks or more per year of paid vacations. Almost half of all office workers and about one-third of the plant workers receive 4 weeks vacation after certain length of service. Total weeks of paid vacations increased from 17-1/2 million weeks in 1929 to 95 million weeks in 1964, although the number of workers did not quite double.

Another recent development that has increased recreation demand is the additional life expectancy and the lower retirement age. Approximately 30 million Americans have retirement income or other nonwork transfer payments as a primary source of income.

For the first time in history, both the time and money to indulge in expensive and time-consuming recreation activities have been a reality for the average American. This change has made the development of a new tourist industry possible. The industry is a primary one in many areas and is rapidly growing in many others. While the total economy of America has been moving ahead at a steady pace, not all share the benefits equally. The lower 20 percent of the income groups receive less than 5 percent of total family income. Studies indicate that people in the lowest income brackets spend most of their funds on basic necessities. As incomes increase, spending on the basic essentials increases also but not proportionately as fast. The types of outdoor activities which the low income groups participate in tend to be those available in the cities. Walking for pleasure, street play, and visitation to city and community parks are among the main outlets.

Population

The third primary component of recreation demand is population change. While the growth rate has declined since 1800, the national population has increased an average of over 3 million people each year. With the trend toward smaller families the number of households has increased more than the population. Thus, while the United States population increased by 200 percent between 1890 and the present, the number of households has increased 340 percent. (22)

Mobility

The past trend in passenger car ownership and total miles driven has made Americans the most mobile people of the world.

Increases are also significant in air, bus, and boat transportation. In 1909 about 20 percent of consumer transportation expenditures was for automobiles, 56 percent for public transportation, and 24 percent for other private transportation. By 1964, about 93 percent of such expenditures were for privately owned automobiles.

Jet passenger planes, new highways, and the number of automobiles have combined to place recreation opportunities, both close to home and far away, within easy reach of most Americans. In 1963 they took 257 million overnight trips or trips to places at least 100 miles or more away. The Bureau of the Census reports that these trips, most of which were for pleasure, included 487 million traveler occasions (1.9 persons per car). The number of travelers is increasing at 6 percent per year while the population is increasing at less than 2 percent.

Urbanization

During the past 100 years there has been a shift away from farming with a concurrent expansion of cities. The concentration of people in urban areas and an increase in the numbers employed in offices and factories have accounted for much of the rise in nonurban outdoor recreation activities.

Technological Changes in Domestic Life

The trend toward easier and more efficient methods of performing the household tasks of cleaning, washing, cooking, and heating complements the reduction in the work week for office and factory workers. In the field of communication, the influence of television has had a very significant impact on American recreation habits. The many programs and advertisements relating to travel and outdoor adventure have surely sharpened the appetites of the urban dweller to obtain first hand experience. National slogans such as "See America First," along with travelogues, have had strong influences on latent demand. The improvement and new developments in outdoor recreation equipment such as travel trailers, boats, snowmobiles, pickup campers, ski equipment, and such has made outdoor play attractive. Often ownership of expensive equipment is a status symbol as well as a functional item.

Education

The 1962 report of the Outdoor Recreation Resources Review Commission indicates that generally the more educated individuals become the greater their participation in outdoor recreation

activities. The trend in education is upward, and if it continues the American people will become more skilled and have the benefits of superior technology. This will lead to those improvements in living standards which have been the wellspring of recreation demand in America.

Influence of Government

The 1962 report of the Outdoor Recreation Resources Review Commission has served to focus public attention on the factors listed previously. As a result cities and counties all across the land are developing plans to beautify and preserve open space, and develop urban and suburban parks. The states have developed comprehensive outdoor recreation plans to guide the increased investments in acquisition and development of new recreation areas. The Federal Government and Congress have taken the lead by providing assistance through grant-in-aid programs to stimulate local action. In addition, new national park and recreation areas have been established in many sections of the country. Recent legislation has established a wilderness preservation system, a national system of trails, a system of wild and scenic rivers, and established water and air pollution programs. All of these actions by the different levels of government have helped to stimulate additional demand for outdoor recreation.

Recreation Market Area

The recreation market area is defined as the area from which 80 percent of the recreation users are expected to come. Although tourists from every state in the Nation and from many foreign countries seek the region's recreation opportunities, the bulk of those influencing demand for the region's resources reside either within the region or within a day's drive. This is the pool from which the vast majority presently using the region's recreation facilities are drawn and from which, despite technological and engineering development in transportation capabilities, the greatest demand will be generated in the foreseeable future.

Study Area Population

The rate of growth of the resident population of the region is typical of many other parts of the Nation. During the early years, its rate was much above that of the Nation; but by 1910, as the region matured and the large westward migrations slowed, the rate of population increase slowed. Between 1950 and 1960, the region's population growth was slightly under the national rate.

Many of the residents of the region desire to live here because of the abundant recreation opportunities afforded by the mountains, seashores, lakes, rivers, and other features. As a result, per capita rates of participation by the resident population are higher than for the Nation and other less-endowed regions.

Other Market Area Population

The population located within a day's drive of the region is in northern California, most of Nevada and Utah, northwestern Colorado, Wyoming, eastern Montana, and the southern part of the provinces of Alberta and British Columbia in Canada. While the region's population increased 18 percent between 1950 and 1960, this area's population expanded about 34 percent to 12 million. It is from this population that the resident and most of the nonresident demand will originate.

OUTDOOR RECREATION NEEDS

Outdoor recreation needs are expressed in terms of unsatisfied demand (in recreation days). This is obtained by comparing the present level of development (1970 use) to the total demand for the target years. By extension of the 1965 use data, shown in table 4, recreation use in 1970 is estimated at 212.5 million recreation days. Extensions were made for each subregion on the basis of past trends at several different types of recreation areas for which historical data were available. It is assumed that facility development between 1965 and 1970 was sufficient to accommodate the increased use. A comparison of total recreation demand (253.3 million) and the 1970 use (212.5 million) shows an unsatisfied demand of 40.8 million recreation days, indicating a lag in facility development to meet demand. Figure 2 shows that facility development will be required for 993.3 million recreation days by 2020 to meet increased total recreation demand.

Water related demand represents nearly 38 percent of total recreation demand and it has been assumed that water related use bears about the same relationship to total use. On this basis, an estimated 16.2 million recreation days of water related demand were unsatisfied by the 1970 level of development. Water related recreation demand will require facility development for an estimated 371.6 million recreation days between 1970 and 2020. Each subregion varies in the extent of development needs to fully satisfy water related demand. Projected subregional needs are listed in table 6.

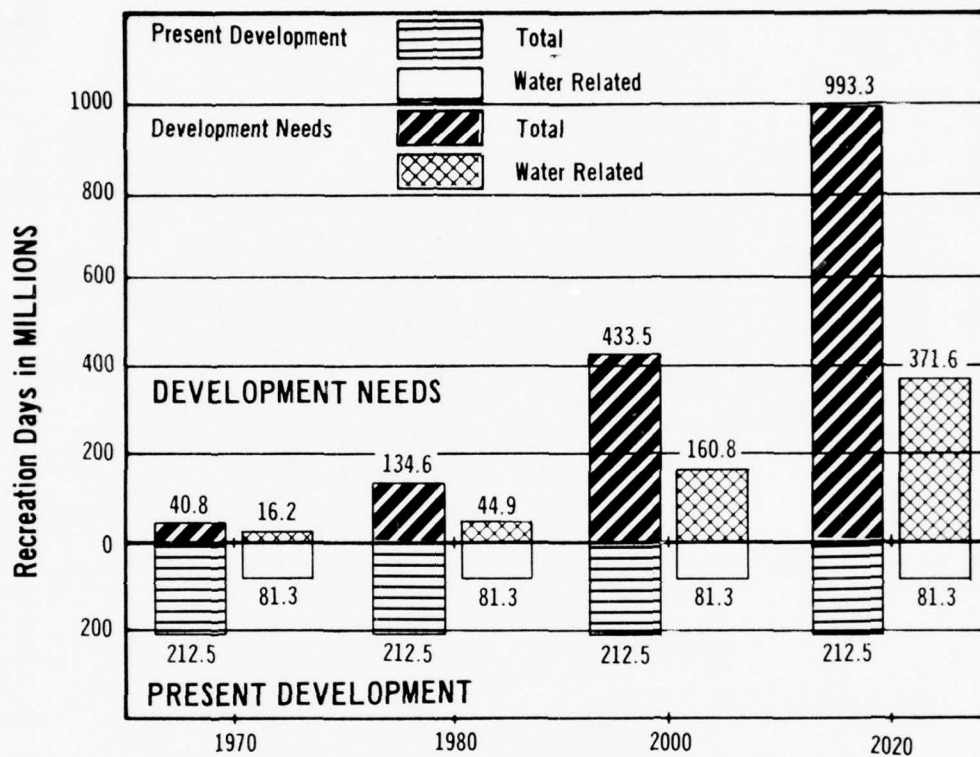


FIGURE 2 Need for Recreation Facility Development

C-NP Region

Table 6 - Additional Recreation Day Needs to Meet Water Related Demand
Columbia-North Pacific Region

		1970	1980 (1,000 Recreation Days)	2000	2020
Subregion 1	Projected Demand	9,400	11,700	22,300	40,900
	1970 Development Level	6,400	6,400	6,400	6,400
	Residual Needs	3,000	5,300	15,900	34,500
Subregion 2	Projected Demand	6,800	7,400	14,100	25,900
	1970 Development Level	6,500	6,500	6,500	6,500
	Residual Needs	300	900	7,600	19,400
Subregion 3	Projected Demand	3,900	4,500	7,900	14,500
	1970 Development Level	3,000	3,000	3,000	3,000
	Residual Needs	900	1,500	4,900	11,500
Subregion 4	Projected Demand	7,400	8,800	16,800	30,900
	1970 Development Level	5,900	5,900	5,900	5,900
	Residual Needs	1,500	2,900	10,900	25,000
Subregion 5	Projected Demand	6,100	8,700	17,700	32,500
	1970 Development Level	4,800	4,800	4,800	4,800
	Residual Needs	1,300	3,900	12,900	27,700
Subregion 6	Projected Demand	4,000	4,600	8,200	15,000
	1970 Development Level	3,200	3,200	3,200	3,200
	Residual Needs	800	1,400	5,000	11,800
Subregion 7	Projected Demand	7,200	8,400	15,900	29,200
	1970 Development Level	5,500	5,500	5,500	5,500
	Residual Needs	1,700	2,900	10,400	23,700
Subregion 8	Projected Demand	1,800	3,000	5,800	10,600
	1970 Development Level	1,500	1,500	1,500	1,500
	Residual Needs	300	1,500	4,300	9,100
Subregion 9 ^{1/}	Projected Demand	10,800	16,400	31,700	64,000
	1970 Development Level	10,300	10,300	10,300	10,300
	Residual Needs	500	6,100	21,400	53,700
Subregion 10	Projected Demand	22,100	24,800	47,300	86,800
	1970 Development Level	17,200	17,200	17,200	17,200
	Residual Needs	4,900	7,600	30,100	69,600
Subregion 11 ^{1/}	Projected Demand	17,600	27,200	53,000	100,000
	1970 Demand Level	16,700	16,700	16,700	16,700
	Residual Needs	900	10,500	36,300	83,300
Subregion 12	Projected Demand	400	700	1,400	2,600
	1970 Development Level	300	300	300	300
	Residual Needs	100	400	1,100	2,300
Region	Projected Demand	97,500	126,200	242,100	452,900
	1970 Development Level	81,300	81,300	81,300	81,300
	Residual Needs	16,200	44,900	160,800	371,600

^{1/} Data as developed in the Willamette Basin and Puget Sound Type 2 Studies are as follows:

Subregion 9	Projected Demand	23,546	36,655	60,592
	1963 Development Level	14,263	14,263	14,263
	Residual Needs	9,283	22,392	46,329
Subregion 11	Projected Demand	50,100	96,400	178,700
	1960 Development Level	17,010	17,010	17,010
	Residual Needs	33,090	79,390	161,690

MEANS TO SATISFY NEEDS

To satisfy the additional recreation demand, listed in the previous chapter, will require three essential steps:

- (1) Protection of existing outdoor recreation resources through preservation programs to include both land and water areas of special significance.
- (2) Development of existing resources. This will include expansion of existing recreation areas and development of identified potential currently in public ownership.
- (3) Acquisition or other dedication of additional land and water areas needed to supplement the existing supplies. The acquisition of land areas is needed to provide development zone and to protect the integrity of other public recreation program areas. The development of private lands, through investment of private capital to provide outdoor recreation facilities, may not require an acquisition program.

The three steps, listed above, are covered in more detail under subsequent discussion and within each subregion chapter. The mix, between development and preservation, varies with each subregion. Alternatives for adjustment of the mix or other actions, such as changes in BOR classes, provide a wide selection. Before reclassification can be a useful tool, a thorough study of the system that classes land by its physical characteristics, and also by capacity or types of uses, would be most helpful in future planning efforts.

Protection of Resources

The experience of the past indicates that unless steps are taken now to set aside and preserve recreation resources, future generations will lose the opportunity to fully enjoy the resources. Recreation resources should be fully protected, not only from competing land uses but also from incompatible use which could diminish satisfaction gained from recreation experience. Every effort should be made to set aside unique features of the landscape for recreation use. The more interesting natural, archeological, and historical areas should be identified, classified, protected, and interpreted through both Federal and state systems.

Many rivers and streams of the region are still in their natural, free-flowing condition. Five streams have been included within the national system pursuant to the Wild and Scenic Rivers Act (PL 90-542), and another 33 are designated for study to determine their potential for addition to the system. There are many other streams, throughout the region, that should also be studied to determine their value for inclusion in either the Federal or a state system of wild, scenic, and recreation rivers. Each state should consider legislation for establishment of a system of rivers and preservation of natural and historic areas that are of state or regional significance. Each of the sub-region sections contains a preliminary list of streams that should be considered in such studies. These rivers or river reaches have been identified because they represent some of the last outstanding examples of free-flowing water in the Nation. They occupy areas of mountain remoteness, deep and dissected canyons, and tranquil level plains. The rivers are not listed in any sequence or order of importance; they just represent the remaining supply. Future water resource development projects will, undoubtedly, be constructed. They will create an impact on this supply. The development process is irreversible. Once a project is completed, the white water is lost for the foreseeable future. The list has been developed to identify the supply of free-flowing rivers remaining. Study of the value of free-flowing rivers is equally as important as study for their development. A full scale study of the wild, scenic, and recreation river potential of any river, or segment thereof identified on the lists, should precede any decision concerning a proposal for water resource development of that river, or segment thereof. Table 7 contains a summary of miles of streams.

Table 7 - Free-Flowing Rivers, by Subregion, Columbia-North Pacific Region, 1970

Subregion	Designated Rivers ^{1/}				Additional Segments of Rivers with Potential for Dedication as Free-Flowing		Total (Miles)
	Instant ^{2/} (No.) ^{4/}	(Miles)	Study ^{3/} (No.)	(Miles)	(No.) ^{4/}	(Miles)	
1	-	-	7	534	13	634	1,168
2	-	-	4	176	9	377	553
3	-	-	-	-	12	449	449
4	-	-	3	225	18	703	928
5	-	-	1	74	17	879	953
6	4	257	7	591	21	1,052	1,900
7	-	-	4	398	9	476	874
8	-	-	-	-	11	371	371
9	-	-	-	-	14	597	597
10	1	85	1	75	32	1,182	1,342
11	-	-	6	166	37	850	1,016
12	-	-	-	-	-	-	-
Total	5	342	33	2,239	193	7,570	10,151

^{1/} Wild and Scenic Rivers Act, P.L. 90-542, October 2, 1968.

^{2/} Dedicated as components of the national wild and scenic rivers system.

^{3/} Designated for study by section 5(a) and selected for section 5(d) status.

^{4/} Entire reaches or specified segments thereof. Descriptions and locations can be found in the subregion chapters.

Table 8 lists the extent of existing and identified potential roadless areas and scenic roads by subregion. The locations of these are shown on the maps in the subregion chapters. The potentials listed are based on best estimates of the land-managing agencies and highway departments.

Table 8 - Acreage of Roadless Areas and Miles of Scenic Roads, by Subregion
Columbia-North Pacific Region

Subregion	Roadless Areas				Scenic Roads	
	Established ^{1/}		Potential Additions ^{2/}		Established	Potential Additions
	(No.)	1,000 (Acres) ^{3/}	(No.)	1,000 (Acres)	(Miles) ^{4/}	To Existing Road Systems (Miles) ^{4/}
1	6	1,505.5	4	270.0	1,300	560
2	2	653.1	4	197.9	400	1,200
3	1	22.9	2	85.0	60	250
4	2	562.4	14	716.4	830	374
5	4	110.2	7	72.7	1,350	334
6	4	2,382.5	20	383.2	1,580	460
7	7	146.5	-	-	1,130	1,008
8	2	102.2	3	34.7	110	394
9	5	266.2	2	5.2	350	398
10	1	76.2	10	119.4	950	1,100
11	2	507.1	6	578.4	360	750
12	1	5.0	7	231.0	310	652
Total	37	6,339.8	79	2,693.9	8,730	7,480
Overlap	-14	-	-4	-	-	-
Regional Total	23 ^{5/}	6,339.8	75 ^{5/}	2,693.9	8,730	7,480

^{1/} All noncontiguous wilderness areas or portions thereof within the subregions that are in the National Wilderness Preservation system or established by other authority.

^{2/} Preliminary estimates provided by FS, BLM, NPS, and BSW. Includes some areas for which classification studies have been completed and others requiring initial study.

^{3/} All in national forest areas. FS acreages reported in BOR Class V category with 5,000 acres added for Subregion 12.

^{4/} Preliminary estimates.

^{5/} Eliminates areas that overlap one or more subregions and were included in each count.

Many of the needed actions cannot be carried out unless changes are made in the legislative structure. Many of the cities and local governments, along with the states, have passed legislation recently to benefit outdoor recreation, but there are several areas in which there remains a definite need, such as establishment of statewide systems of rivers, trails, scenic roads, and historic areas. Zoning is needed to preserve the waterfront areas and the tidelands, and estuaries are in need of protection from nonconforming uses through legislation.

Protection can best be accomplished by implementation of the following:

1. All lands and waters with recreation and unique scenic potential, now in public ownership and available for public use, should be retained for such use.

2. The Federal Government, state and units of local government should plan and zone lands adjacent to lakes, streams, reservoirs, tidelands or marine waters, and interconnecting roads and in a way as to protect the ecological, environmental, and natural beauty values of such areas.

3. Federal, state, and local agencies should conduct professional research and inventories of historic sites and structures, archeological sites, natural landmarks, and natural areas of national, state, or local significance.

4. Natural resource and recreation agencies should establish systematic review procedures for thorough consideration of the values of wetlands and estuarine resources.

5. The states should establish interagency committees on environmental quality to develop criteria for highways, other transportation facilities, and individual projects involving major environmental policy issues.

6. The states should acquire or otherwise provide protection for natural, historic, and archeological areas as part of a system representative of the natural landscape types, endemic vegetation, and history of the area.

7. Landowners should be provided cost-sharing incentives for investments and practices that provide natural beauty benefits to the public and for programs for land reclamation, and rehabilitation of areas damaged by surface mining or other practices.

8. Sponsors, of any water development proposed in the region, should provide ample funds and lead time for:

a. A full scale professional study of the wild, scenic, and recreation river potential of any river, or segment thereof, as listed for each subregion affected by the proposed project. These studies should be conducted by or in cooperation with qualified State and Federal Agencies in accordance with standards for studies conducted under the Wild and Scenic Rivers Act or state legislation. This will assure full consideration to all potentials.

b. Professional archeological research (reconnaissance, excavation, analysis, and publication). The mere discovery and collection of archeological data is an expensive and time-consuming operation. The analysis of data and the presentation of the results, depending upon the circumstances, could take four to six years for completion.

County and city areas are usually designated to accommodate intensive day use, while the more remote areas, under jurisdiction of Federal and state levels, provide for overnight and vacation uses. Studies in California have indicated that about 60 percent

of the demand generated from resident population is for close-in day-use areas, while 30 percent is for weekend trips of up to 125 miles. The remaining 10 percent is allocated to vacation travel outside of a subregion.

The statewide outdoor recreation plans of Washington, Oregon, and Idaho, point up the fact that the most pressing needs for both water related and nonwater related recreation are in and near the urban areas such as Seattle-Tacoma, Portland, Spokane, Boise, Eugene, Yakima, Idaho Falls, Medford, and Salem. Each of the subregion reports lists special needs that apply to that particular area.

Competing land and water uses impair and restrict the public use of these resources for recreation. For example, waterfront residential development, shoreline roads, municipal water supply reservoirs, and private ownership of waterfront and tidal areas restrict, to varying degrees, the availability of these resources which are needed for public enjoyment. Stretches of tideland and beach are being altered by dredge and fill operations to accommodate residential and commercial uses. There is a need for more detailed studies, followed by zoning, to lessen the competitive effects of such operations. Studies of the municipal watersheds are needed to determine the level of compatibility of recreation uses with water supply management.

An improved system is needed for classifying the recreation lands and waters that will provide both more uniformity and a better recognition of all facets of a wide range of recreation values. Several weaknesses in the existing system were found during the study. Classes, based on capacity and types of use, might provide a better basis for future planning. There are special needs to determine capacities of the saltwater shorelines of the region.

Federal, state, and local agencies need to include the use of flood plain areas as a necessary element of comprehensive development planning. Flood tolerant uses, such as agriculture and recreation, need to be encouraged with caution in critical areas.

Acquisition and/or development of recreation areas, adjacent to existing waters, need to receive precedence over recreation areas in conjunction with the construction of new reservoirs, especially where the latter areas are outside of the day-use zones of population areas.

Studies should be made of the recreation resources of the San Juan Islands, and of Puget Sound, to explore the establishment of Puget Sound as a recreational waterway. A special recreation study of reconnaissance Type 2 scope is needed for the coastal areas of the region.

In order to achieve optimum recreation facility utilization, a study is needed to determine methods for greater distribution of recreational uses, both in terms of time and location.

In these areas where streams such as the Willamette, Boise, and Spokane Rivers pass through population areas, there is a need for special study to determine the recreational potential of these streams in meeting urban requirements.

Development of the Resource

To accommodate the additional water related recreation demand projected for the future years will require development of the existing supply of land and water areas. There may be an imbalance between the location of the public lands and waters and the population centers. The alternatives are either to develop the existing public supply of water areas or to increase the surface acreage of slack water by impoundment of more water near population areas where shortages occur. The scope of this study does not permit an analysis of locational imbalances; and therefore, the actual location of additional lands and water areas needed have not been identified.

Both public and private enterprises will have to initiate or accelerate programs of providing outdoor recreation opportunities. Recreation developers should make every effort to locate additional facilities and areas adjacent to desirable water bodies. The acquisition and development of public recreation areas and access points on lands adjacent to existing waters should receive precedence over construction of additional reservoirs for recreation use. Investments to acquire and develop recreation opportunities at existing water resources, leaving important recreation streams and rivers in a free-flowing condition, should provide the greatest range of total recreation benefits.

Additional impoundments will attract recreation use, and if these are located near the population areas where the greatest need exists, they can help provide needed capacity for water related recreation opportunity. When multiple-purpose impoundments are developed, recreation and environment should receive equal consideration with other purposes, and appropriate recreation facilities should be provided as a part of the total project package.

Reservoirs should be designed and operated so as to provide the best practical pool levels and downstream flows to enhance public recreation and maintain a pleasant environment.

Where the present combination of public and private recreation lands is inadequate or where other types of development threaten to occupy desirable recreation sites, high priority should be given to the acquisition of these lands for recreation. Emphasis should be placed on the waterfront lands near the urban areas and on the saltwater shorelines and islands. Waterfront lands needed to satisfy long-term needs should be purchased now to hedge against rapid price escalation.

Both public and private interests should accelerate programs of supplying recreation opportunities if demands are to be satisfied. To accomplish this, funding at all levels of government and encouragement and incentives to private capital sources should be increased. Public agencies should take full advantage of bond issues. Federal assistance programs to increase necessary funding for state and local development will need to be increased.

Private investments in outdoor recreation will play an important part in satisfying recreation demand and in shaping the environment. The nonprofit organizations such as church camps, boy scouts, etc., along with industrial groups, will continue to supply a substantial amount of urban and nonurban recreation opportunity.

In order to enhance the opportunities for private development, the appropriate intergovernmental bodies should study the effects of Federal, State, and local tax policies on private tracts used for recreational purposes. Consideration of tax relief for urban and rural "greenbelts" used for environmental enhancement should provide effective incentives to private interests for environmental improvement.

In each of the subregion chapters, there is a discussion of needs on the basis of water related recreation activities. To determine the need for land and water for a specific activity, it was necessary to reduce the total annual demand to a design day. The design load was determined for an average weekend day during the peak month and is an estimate of the number of persons and families that would be seeking outdoor recreation on this day. Generally, this amounted to about 1 percent of the annual demand. The next step was to determine which activities these persons would likely be seeking on this day. The percentage of the total seeking to swim, water ski, sightsee, picnic, camp, nature walk, and other activities was applied to the design load. For some activities such as swimming and picnicking, where the time spent in the activity may be short, a turnover rate was estimated to account

for multiple use of facilities. Once the number of persons and families was determined for the design day, a set of standards for land area and water were used to estimate the total area needed for a specific activity on the design day.

The land requirements by subregion and activity are listed in table 9. This represents the land area needed for facility development in support of the water associated activities. It does not include requirements for general activities such as sightseeing, buffer zones, driving, wilderness inholdings, hiking, and many other uses. The development land will be principally BOR Class I and II.

Based on the land requirements listed in table 9, a distribution of land acquisition and construction needs was made by major levels of government and for the private sector. Table 10 summarizes the development in gross land area needed by time period to meet the projected water related recreation demand.

Table 9 - Land Requirements for Water Related Recreation Demand by Activity and Subregion, Columbia-North Pacific Region

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking	39,810	53,725	100,330	187,750
Swimming	673	905	1,740	3,100
Boating and Water Skiing ^{1/}	6,200	9,212	19,135	36,160
Other ^{2/}	6,960	9,310	14,675	27,290
Total Land	53,643	73,152	135,880	254,300
<u>Subregion</u>				
1	4,430	5,790	10,500	19,490
2	2,780	3,630	6,560	11,910
3	1,715	2,185	3,770	7,170
4	3,070	4,180	7,720	14,210
5	3,320	4,470	8,260	14,680
6	1,510	2,030	3,690	6,730
7	2,690	4,030	7,120	13,090
8	1,285	1,800	3,260	6,050
9 ^{3/}	10,660	14,780	26,770	50,850
10	8,850	11,990	22,600	41,550
11 ^{4/}	13,170	18,070	35,280	67,900
12	163	197	350	670
Total	53,643	73,152	135,880	254,300

^{1/} Includes recreation boat fishing.

^{2/} Includes nature walks and shoreside hiking.

^{3/} Estimates not made in Willamette Basin Type 2 Study.

^{4/} Estimates from Puget Sound Type 2 Study: 1980 - 13,485; 2000 - 26,340; 2020 - 50,695.

Table 10 - Land Acquisition and Development Needs for Water Related Recreation Demand
Columbia-North Pacific Region^{1/}

	Water Related Development Needs			Land Acquisition Needs ^{2/}			Facility Development Needs ^{2/}		
	1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)								
Federal	15.0	27.4	50.8	-	-	-	2.5	11.1	34.8
State	21.8	40.8	76.4	4.1	18.5	48.7	15.6	34.3	69.5
County and Municipal	21.5	40.1	75.2	13.8	30.0	61.6	18.9	37.3	72.4
Private	14.8	27.7	52.0	-	-	-	12.7	25.6	49.9
Total	73.1	136.0	254.4	17.9	48.5	110.3	49.7	108.3	226.6

^{1/} Summary of totals from subregions.

^{2/} Land Acquisition and Development Needs are derived from subregional totals. These are the acreages of areas requiring facility development.

Distribution by major administrative agency was made by classifying present use by administrative level, adjusting the future needs by applying different carrying capacities and projecting this adjusted demand. This procedure allows for the high demand requirements and high carrying capacity per acre of developed sites administered by many county and municipal governments. This reduces the total land acquisition and development requirements for this level of government in comparison to others. Land costs per acre would also be higher. Each administrative level's share of future demand was held constant by time periods due to lack of reliable data or future shifts. Should small shifts actually occur over time, they will not affect the total projections.

Within each subregion section, the projected demand is compared to the existing supply of BOR Class I and Class II land. This method gives the best assessment of which level of administration has the greatest need. The data listed in table 10 are a summary of the subregions. Since shortages within one subregion usually cannot be satisfied within other subregions due to the distance involved, a total regional supply compared to total regional demand is not a meaningful representation of the situation. Even the evaluation done on the basis of a subregion fails to properly assess the needs due to imbalance of supply compared to the local demand. The analysis does not point out the urgent need for land acquisition and development at the state and local governmental levels on a regionwide basis.

Land acquisition needs for the Federal agencies for special programs, such as inholdings of private lands within national parks and wildernesses to protect the values of these areas, were not estimated. Special scenic easements for road and river areas and other new programs would also be in addition to the estimates in

table 10. Such estimates would not be available until the feasibility studies on these areas were completed.

The water surface requirement for the water related activities listed in table 11 is based on 2 acres of water surface for each acre of land listed for camping and picnicking, 160 acres for each acre of land to support water skiing, 3 acres of swimming water per acre of beach for swimming, and 1 mile of waterfront for each mile of nature trails. Since much of the water surface can be used for more than one activity, it is not possible to determine the total water surface needs except that as a minimum, the need will be at least equal to the largest requirement for a single activity.

Table 11 - Water Surface Requirements for Water Related Recreation Demand, by Activity and by Subregion, Columbia-North Pacific Region

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking	79,620	107,450	200,660	375,500
Swimming	2,019	2,715	5,220	9,300
Boating and Water Skiing ^{1/}	316,675	465,300	913,400	1,705,900
Other ^{2/}	-	-	-	-
Total	398,314	575,465	1,119,280	2,090,700
<u>Subregion</u>				
1	35,625	43,930	84,360	155,660
2	17,090	19,820	35,840	65,520
3	14,560	16,475	28,620	53,040
4	13,820	17,550	33,470	62,110
5	14,420	20,550	38,370	69,490
6	6,760	8,075	14,550	26,640
7	13,330	16,660	31,580	57,660
8	13,630	24,660	47,290	87,580
9 ^{3/}	73,360	110,780	216,100	406,400
10	36,900	52,420	99,150	182,940
11 ^{4/}	158,190	243,530	487,960	920,000
12	629	1,015	1,990	3,660
Total	398,314	575,465	1,119,280	2,090,700

^{1/} Includes recreation boat fishing.

^{2/} Includes nature walks and shoreside hiking. (Water requirements for this category are satisfied by area requirements for other water related activities).

^{3/} Estimates not made in Willamette Basin Type 2 Study.

^{4/} Estimates from Puget Sound Type 2 Study: 1980 - 568,545; 2000 - 1,204,095; 2020 - 2,416,175.

The supply of fresh water for the region listed in table 1 when compared to the requirements in table 11 indicates that the supply is adequate. As with the land resources, such an analysis is somewhat misleading since it does not consider local imbalances due to the location and distribution of the supply. Also the vast acreage of marine water in Subregions 10 and 11 is available to absorb certain types of boating and other water related recreation.

The needs for boating were determined for each of the subregions as follows:

The number of boats and types of boats for Subregion 11 were taken from "Pleasure Boating Study for Puget Sound and Adjacent Waters, State of Washington," November 1968. The subregions within Oregon were estimated from data contained in the "Report of a Statewide Survey of Recreational Boating Needs, State of Oregon," July 1966. The Idaho subregions were based on an unpublished report being prepared by the Walla Walla District, Corps of Engineers, and the other subregions in Washington were based on a similar report being prepared by the Walla Walla District Office. For the portion of Montana and Wyoming in the study area, an estimate was made on the basis of per capita ownership in the adjoining states applied to the resident population. The projections of future use and number of boats were based on similar projections made for pleasure boats using navigable waters prepared for Appendix X, Navigation. The regional totals and projections are listed in table 12.

To determine the number of lanes of boat launching ramps required to accommodate the trailered and car-top boats, an estimate was made as to the percentage of the total boats that would be used on the design day. This varied from 30 to 40 percent, depending upon the subregion. Assuming that 40 launchings per lane of ramps would be average, the total requirement was estimated as indicated in table 12. An allowance was made for distribution of the boat ramps in addition to the calculated number.

The need for miles of free-flowing water for canoes, kayaks, rubber rafts, and other type boats has not been determined; but there is a large and growing number of these craft in the region. In view of the list of streams presented in each subregion, it appears that there will be adequate mileage of this type water to satisfy the float-boating demand if the free-flowing water is preserved for the future.

Additional water access sites will be needed for parking, sanitary facilities, launching ramps, turnarounds, and other uses to support the boating activity.

Table 12 - Pleasure Boat Projections
Columbia-North Pacific Region

Boat Class	1970	1980	2000	2020
		(1,000 Boats)		
Trailered	295.9	433.2	817.4	1,523.5
Car top	37.7	54.8	107.4	201.9
Moored	72.6	106.5	208.7	392.7
Stored	16.9	24.7	48.4	91.8
Total	423.1	619.2	1,181.9	2,209.9
Lanes of Ramp	1,930	2,655	5,025	9,325

Because of the difficulty of determining land requirements for other activities such as skin diving, marine photography and other water related activities, they have not been included in this report.

Distribution of Use

While many of the recreation sites are in jeopardy of damage from overuse, there are some sites and areas that are underused. There also is an imbalance between weekday and weekend use. To change the present patterns of use would require an intensive promotion campaign aimed at getting more interest in the lesser known, but attractive recreation areas. Maps, brochures, and other information disseminated by the management agencies would help to inform the public of alternative areas.

Lengthening the Recreation Season

Most of the recreation use occurs during the summer months when schools are out and the climate is ideal. Changes cannot be made in the climate, but there is a possibility of changes in school schedules and work weeks that may have a tendency to eliminate the heavy weekend impact. At charge areas, rates can be lowered for midweek and off season to encourage use during these times. Winter activities can be given more emphasis, and winter camping should be encouraged as a means of lengthening the season.

Substitution of Uses

Where there is an insufficient supply of recreation opportunity or a possibility of damage through overuse, the alternative would be to encourage different types of uses. More emphasis on activities such as cross-country skiing can help to relieve congestion on ski tows. The new innovation in outdoor recreation equipment has and will continue to provide new opportunities in addition to the more conventional ones. Education of the public to accept warm water fish instead of trout would expand use of fish resources.

COSTS

For the purpose of this report, the estimated costs for land acquisition and development have been limited to the water-related activities. Average costs for development and acquisition were obtained from a wide range of state, local, and Federal recreation managing agencies in addition to annual cost for operation, maintenance, and replacement. All costs were equated to a recreation day. Capital investment cost is based on providing land and facilities to accommodate a total number of water related recreation days per year. These would represent one time investment costs. The annual cost would occur each year and would vary with the change in use.

Table 13 lists land acquisition and development costs for the region by target dates. The water related demand to be satisfied is listed as required development and shown for each subregion. A capital investment cost of \$4.15 per recreation day was used to estimate these costs. The annual operation, maintenance, and replacement costs are based on \$0.25 per recreation day. The costs listed in table 13 do not include costs for new programs or acquisition of special areas. These costs are in addition to the costs listed in Appendix X, Navigation, which covers recreation boating facilities on navigable waters.

Table 13 - Cost of Required Facility Development to Satisfy Water Related Recreation Demand 1/
Columbia-North Pacific Region

Subregion	Item	Unit	1970-1980	1981-2000	2001-2020	Total
1	Required Development	1,000 Rec Days	5,300	10,600	18,600	34,500
	Investment Cost	\$1,000	21,995	43,990	77,190	143,175
	Annual OM&R Cost	\$1,000	1,325	2,650	4,650	8,625
2	Required Development	1,000 Rec Days	900	6,700	11,800	19,400
	Investment Cost	\$1,000	3,735	27,805	48,970	80,510
	Annual OM&R Cost	\$1,000	225	1,675	2,950	4,850
3	Required Development	1,000 Rec Days	1,500	3,400	6,600	11,500
	Investment Cost	\$1,000	6,225	14,110	27,390	47,725
	Annual OM&R Cost	\$1,000	375	850	1,650	2,875
4	Required Development	1,000 Rec Days	2,900	8,000	14,100	25,000
	Investment Cost	\$1,000	12,035	33,200	58,515	103,750
	Annual OM&R Cost	\$1,000	725	2,000	3,525	6,250
5	Required Development	1,000 Rec Days	3,900	9,000	14,800	27,700
	Investment Cost	\$1,000	16,185	37,350	61,420	114,955
	Annual OM&R Cost	\$1,000	975	2,250	3,700	6,925
6	Required Development	1,000 Rec Days	1,400	3,600	6,800	11,800
	Investment Cost	\$1,000	5,810	14,940	28,220	48,970
	Annual OM&R Cost	\$1,000	350	900	1,700	2,950
7	Required Development	1,000 Rec Days	2,900	7,500	13,300	23,700
	Investment Cost	\$1,000	12,035	31,125	55,195	98,355
	Annual OM&R Cost	\$1,000	725	1,875	3,325	5,925
8	Required Development	1,000 Rec Days	1,500	2,800	4,800	9,100
	Investment Cost	\$1,000	6,225	11,620	19,920	37,765
	Annual OM&R Cost	\$1,000	375	700	1,200	2,275
9 ^{2/}	Required Development	1,000 Rec Days	6,100	15,300	32,300	53,700
	Investment Cost	\$1,000	25,315	63,495	134,045	222,855
	Annual OM&R Cost	\$1,000	1,525	3,825	8,075	13,425
10	Required Development	1,000 Rec Days	7,600	22,500	39,500	69,600
	Investment Cost	\$1,000	31,540	93,375	163,925	288,840
	Annual OM&R Cost	\$1,000	1,900	5,625	9,875	17,400
11 ^{3/}	Required Development	1,000 Rec Days	10,500	25,800	47,000	83,300
	Investment Cost	\$1,000	43,575	107,070	195,050	345,695
	Annual OM&R Cost	\$1,000	2,625	6,450	11,750	20,825
12	Required Development	1,000 Rec Days	400	700	1,200	2,300
	Investment Cost	\$1,000	1,660	2,905	4,980	9,545
	Annual OM&R Cost	\$1,000	100	175	300	575
Region	Required Development	1,000 Rec Days	44,900	115,900	210,800	371,600
	Investment Cost	\$1,000	186,335	480,985	874,820	1,542,140
	Annual OM&R Cost	\$1,000	11,225	28,975	52,700	92,900

1/ Investment cost estimated at \$4.15 per recreation day. Annual OM&R cost estimated at \$.25 per recreation day development within each time period. This indicates annual OM&R cost for the last year in each respective time period: 1980, 2000, and 2020 associated with the incremental development during the time period.

2/ Costs associated with recreation development shown in Willamette Basin Type 2 Study include both water related and nonwater related activities as follows:

			1965-1980	1981-2000	2001-2020	Total
9	Required Development	1,000 Rec Days	9,283	13,109	23,937	46,329
	Investment Cost	\$1,000 ^{1/}	43,600	61,330	107,040	211,970
	Annual OM&R Cost	\$1,000 ^{1/}	3,516	4,946	8,632	17,094

3/ Costs listed in Appendix X, Recreation, Puget Sound and Adjacent Waters Study in addition to development include land acquisition, small boat basins, and planning costs as follows:

			1960-1980	1981-2000	2001-2020	Total
11	Required Development	1,000 Rec Days	33,090	46,300	82,300	161,690
	Investment Cost	\$1,000 ^{2/}	368,704	458,700	764,440	1,591,844
	Annual OM&R Cost	\$1,000 ^{2/}	7,238	8,686	13,752	29,676

Study cost estimates for potential additions to recreation rivers, scenic roads, and roadless systems have been estimated and are listed in table 14. The costs are based on the units presented in tables 7 and 8. All studies are recommended to be initiated during the first planning period. Costs include all costs associated with the needed determinations of those units and include costs to Federal, state, and local agencies.

Table 14 - Estimated Study Costs, Potential Additions to Environmental Protection Program, Columbia-North Pacific Region^{1/}

Subregion	Recreation River Studies (\$1,000)	Roadless Area Studies (\$1,000)	Scenic Road Studies (\$1,000)	Total Study Costs (\$1,000)
1	569	222	14	805
2	500	168	28	696
3	413	74	6	493
4	806	607	8	1,421
5	659	90	8	757
6	1,022	387	12	1,421
7	451	-	24	475
8	381	41	10	432
9	524	14	10	548
10	1,131	140	26	1,297
11	1,104	464	18	1,586
12	-	208	16	224
Total	7,560	2,415	180	10,155

^{1/} Based on miles and acres shown in tables 7 and 8.



LOCATION MAP

20-000000

1

SUBREGION 1

CLARK FORK - KOOTENAI - SPOKANE

PRESENT STATUS

The Recreation Setting

This subregion, which includes western Montana, the panhandle area of Idaho, and northeastern Washington, contains approximately 36,000 square miles. It is mountainous with a series of large valleys and river systems extending northwesterly from the crest of the northern Rocky Mountain chain. It contains some of the finest mountain and lake scenery on the North American continent.

The wide range of elevations and landscape patterns provides the recreation visitors an opportunity to observe the beauty of wild flowers which bloom in profusion throughout the entire spring as the snowline recedes and culminates in an alpine floral display when the season is well advanced. The forest cover of extensive stands of pine, true fir, larch, hemlock and Douglas fir with mixed hardwoods occurring along stream courses combines with the wildflowers in ecologic patterns of intrinsic value.

The recreation visitor, wildlife photographer, and hunter can readily find elk, deer, moose, mountain sheep, mountain goat, and black bear. Cougar, caribou, and grizzly bear can be found with greater effort. The area is also rich in small animal life. Trout, kokanee, bass, perch, and grayling are some of the species of fish available in the many lakes and streams. Rock hounds have been successful in finding a variety of semiprecious stones.

Exploration and fur trade, Indian wars, missions, and gold mining provide the basic historical interests in the subregion. David Thompson of the Northwest Company established Thompson Trading Post on the Clark Fork arm of Pend Oreille Lake in 1809. Another trading post was Kullyspell House, in the same vicinity. The Indian uprising in the late 1850's pointed out the need for a second road to the Northwest as a faster means of getting from the headwaters of the Missouri to the Columbia River. This brought about the construction of the Mullan Road which was completed in 1862 along the general route of present U.S. Highway 10. Fourth of July Canyon and Mullan tree, just east of Coeur d'Alene, are points of interest along this route.

As a result of the Indians' search for the "white man's book" and the settlers' request, missions were established throughout the area. St. Michael's Mission State Historical Site in Washington and Cataldo Mission in Idaho perhaps are the best known. Others include Pend Oreille, Sacred Heart, Spokane, St. Mary's, St. Ignatius, and Coeur d'Alene.

Coincident with the general development of the subregion, gold was discovered on the Coeur d'Alene River. The Coeur d'Alene mining district is active although now it is oriented toward production of silver, lead, and zinc rather than gold.

When the first non-Indians entered this area, they found it occupied by tribes of various backgrounds. Many of the Salish-speakers were riverine peoples, hunters, and fishermen. The Salish tribes, coming from the west, had followed the major river valleys into the Rocky Mountains. Other peoples, such as bands of Flathead, Pend Oreille, and Jutenai, had been buffalo hunters on the high plains until they were forced westward beyond the Continental Divide by incursions of Shoshone and Blackfoot tribesmen. In late prehistoric times, the river valleys were thoroughfares for the movements of tribes and the transmission of cultural traits between the Columbia Plateau and the Great Plains. River courses, particularly the Clark Fork and its tributaries, became the main routes traversed by the Nez Perce and other Columbia River tribes who joined local intermountain tribes on periodic buffalo hunts to the east.

Little is known about the aboriginal peoples who inhabited the area before the historically known tribes. Remains of ancient hunting cultures have been found in adjacent areas to the west (e.g. the Marmes site) and to the east (e.g. Folsom material at the MacHaffie site). There are a few tantalizing surface finds of early material (Cascade and Agate Basin points) from within the area. But much additional archaeological effort is needed to define the most ancient cultures in the area and to determine the nature and extent of Plains-Columbia Plateau contacts in earlier prehistoric periods.

The summer climate of the subregion is characterized by warm sunny days with cool nights and occasional late afternoon and evening thunderstorms of short duration. The autumn periods are characterized by extended periods of rather dry sunny days with frequent frosts at night and striking displays of vegetative color during October and November. Winter temperatures over most of the area are mild. Heavy snow packs provide excellent skiing conditions. This same snow drives big game animals to lower elevations and thus provides opportunities to observe many wildlife species.

Recreation use of the subregion's abundant resources is enhanced by the excellent network of major highways that cross the

subregion and the many miles of secondary and forest roads and trails which offer breathtaking vistas. Major airlines, railroads, and bus systems also provide service to the notable population areas.

The population of the subregion in 1965 was 595,100 (15). About one-half of this total lives in the Spokane metropolitan area and other urban areas such as Butte, Missoula, Coeur d'Alene, Anaconda, and Kalispell. Outside population centers exerting pressures on the subregion are Great Falls and Helena. During the summer months, tourists increase the total population.

Available Outdoor Recreation Resources

Major Recreation Areas

In Washington Mt. Spokane, which is northeast of Spokane, has long been a haven for skiing by Spokane and Idaho panhandle area residents.

In Idaho Upper Priest Lake is well known to recreationists from the western states. The close location of this scenic area to the population center of Spokane increases its importance.

Priest Lake is much larger than its northern neighbor, Upper Priest Lake, and is known for its fishing and wilderness setting. The lake has provided the current national record size mackinaw trout. Indian Creek State Park located on the east shore of the lake has more than 50 family camping units and a day-use area. The Priest River has been designated for wild river study.

Lake Pend Oreille is located in the heart of the Idaho panhandle. The largest version of the rainbow trout, Kamloops, is found in the lake. Farragut State Park near the southern end of the lake has both overnight and day-use accommodations.

Water recreation is the greatest attraction of Coeur d'Alene Lake. This scenic lake provides the base for a very popular summer resort area serving the subregion and the greater Spokane metropolitan area.

In Montana About 250,000 acres of the Selway-Bitterroot Wilderness, the largest wilderness in the United States, are located south of Lolo Pass, and east of the Idaho-Montana border. The area provides a treasure of recreation opportunities in a primitive setting.

About half or 500,000 acres of Glacier National Park is located in the subregion. Set aside in 1910, this mountain wonderland attracts almost a million visitors annually from all over the world.

Over 700,000 acres of the Bob Marshall Wilderness are within the subregion. Lying south of Glacier National Park, the area is noted for outstanding hunting and fishing.

The National Bison Range is a 19,000-acre preserve and home to 500 bison. Located about 40 miles north of Missoula, the range also boasts of herds of elk, deer, and pronghorn antelope. The bison can be viewed the year round roaming the range or in exhibition pastures.

The 75,000-acre Mission Mountain Primitive Area is remote and roadless, but contains glaciers, snowfields, and outstanding beauty. For the rugged, it provides opportunities to photograph wildlife, climb mountains, hunt and fish, and to study glaciers.



Priest Lake in Idaho has outstanding scenery and clear water. The view shown here is from Alder Camp on Barito Island. While the younger generation enjoy swimming, the older ones use the beach areas for relaxation. (Forest Service Photo)

Big Mountain Recreation Area, just east of Whitefish Lake near the city of Columbia Falls, provides summer sightseeing and winter skiing.

Over 97,000 acres of the Anaconda-Pintlar Primitive Area are in the subregion. It is a high mountain wilderness area located southeast of Hamilton. It is best known for its high, barren, and precipitous peaks.

The Cabinet Mountains Wild Area contains 94,000 acres of prominent snowclad peaks and numerous mountain lakes. The area is located southwest of Libby.

Both the Ten Lakes and Northwest Peak scenic areas are located adjacent to the Canadian boundary and contain splendid scenery and glacial lakes.

Existing Supply

Table 15 lists some of the major recreation resources for the subregion.



This Boy Scout troop shown crossing the park bridge across the South Fork of the Flathead River near Black Bear guard station in the Bob Marshall Wilderness is typical of the increasing interest by groups of all sizes to hike the back country. Trips of 6 to 10 days are not uncommon in this area. (Forest Service Photo)

Table 15 - Major Recreation Resources In All Ownerships
Subregion 1

Resource	No.	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	30	335.1	
Lakes and Other Slack Water	63	58.3	
Other Water			
Small		60.6	
Large		58.2	
Total Water Surface		512.2	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		
Study Rivers	7		534
Established Roadless Areas	6	1,505.5	
Established Scenic Roads			1,300

Source: Tables 1, 7, and 8.

Table 16 lists inventoried lands within the subregion that are being used or are suitable for recreation purposes by Bureau of Outdoor Recreation classes. Acreages administered by various levels of government also appear in this table.

Table 16 - Acreage of Inventoried Lands by BOR Classes^{1/}
Subregion 1, 1964

Class	Federal	State	County (1,000 acres)	City	Private ^{2/}	Total
I	N	N	0.2	0.7		0.9
II	77.2	4.4	0.1	0.3		82.0
III	8,817.6	718.0	0.2	1.7		9,537.5
IV	1,538.1	N	-	0.2		1,538.3
V	2,037.8	-	-	-		2,037.8
VI	0.2	N	N	N		0.2
Total						
Inventoried	12,470.9	722.4	0.5	2.9		13,196.7
Not						
Inventoried	5.5	416.5	23.2	24.1	9,153.4	9,622.7
Grand Total ^{3/}	12,476.4	1,138.9	23.7	27.0	9,153.4	22,819.4

^{1/} BOR classes are described in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Lands and Mineral Resources.

N Less than 50 acres total.

There are over 9 million acres of private lands. This includes agricultural areas and urban areas in addition to large tracts of timberland owned by timber companies, railroads, and Indian tribes. Many of the tracts contain scenic lakes and other attractions. There are some local ranchers who supplement their income by providing ranch vacations and serve as packers and guides during hunting and fishing seasons. The private sector has invested heavily in motels, ski resorts, and other tourist facilities. They also sponsor large spectator events such as hydroplane, dog sled, and snow machine races, rodeos, fairs, and local celebrations. Private power companies provide recreation facilities at some of their water storage projects. Tracts of land are being provided by private land developers for summer and winter vacation homes in many parts of the subregion.

This is the second largest subregion in the Columbia-North Pacific Region and has 20 percent of the region's fresh water surface. There are 30 reservoirs in the subregion having a capacity of 5,000 acre-feet or more of water. Many, but not all, provide recreation opportunities.

Recorded recreation use is fairly high, ranking fourth, compared to the other subregions. It is interesting to note that considering the amount of available resource and use, only minimal development has taken place. This should not be interpreted that additional development is not needed.

The general location of existing recreation resources is shown on figure 3.

Table 17 lists recreation facility developments. Only those facilities for which reliable information was available are listed.

Table 17 - Facility Development, Subregion 1

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	1,153	141	15	8	1,317	-	1,317
	Units	1,822	535	38	54	2,449	-	2,449
Trailer	Acres	221	25	7	7	260	-	260
	Units	439	57	19	65	580	2,356	2,936
Group	Acres	140	16	3	125	284	-	284
Picnicking	Acres	1,342	195	74	138	1,749	-	1,749
	Units	1,151	569	145	488	2,353	-	2,353
Marinas	Number	7	-	-	3	10	NA	10
	Slips	45	-	-	31	76	NA	76
Winter Sports	Number ^{1/}	8	-	-	-	-	4	12
	Lifts or Tows	33	-	-	-	-	13	46
Swimming Beaches (Organized)	Acres	41	26	26	35	128	NA	128
Parks and Playgrounds	Number	9	3	13	49	74	-	74
	Acres	37	7	53	249	346	-	346

- Not reported

NA - Not Available.

^{1/} Located on Federal land, operated by private interests.

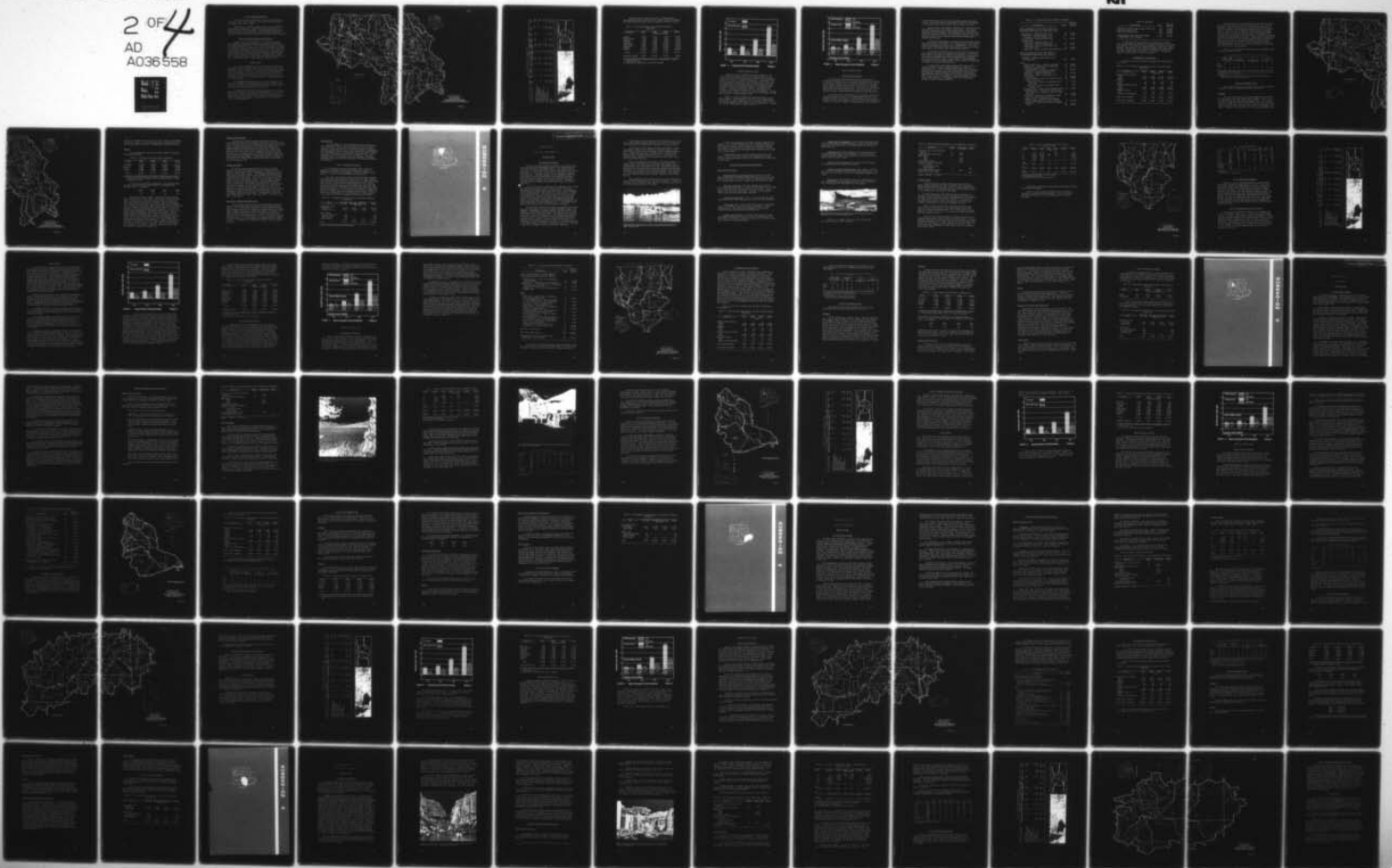
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PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COLUMBIA-NORTH PACIFIC REGION COMPREHENSIVE FRAMEWORK STUDY OF --ETC(U)
JUN 71 E L ARNOLD, R P CLARK, R J COFFMAN

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Use of Recreation Resources

Table 18 lists the reported and calculated visitations to recreation sites in the subregion. The total represents about 8 percent of the entire region.

Sightseeing is the most popular activity in the subregion and accounts for about 24.5 percent of total recreation use. Water skiing is the least popular. Federal agencies provide for about 33 percent of the total use, while county and municipal agencies provide 42 percent, and the private sector about 25 percent.

Value of Outdoor Recreation and Tourism

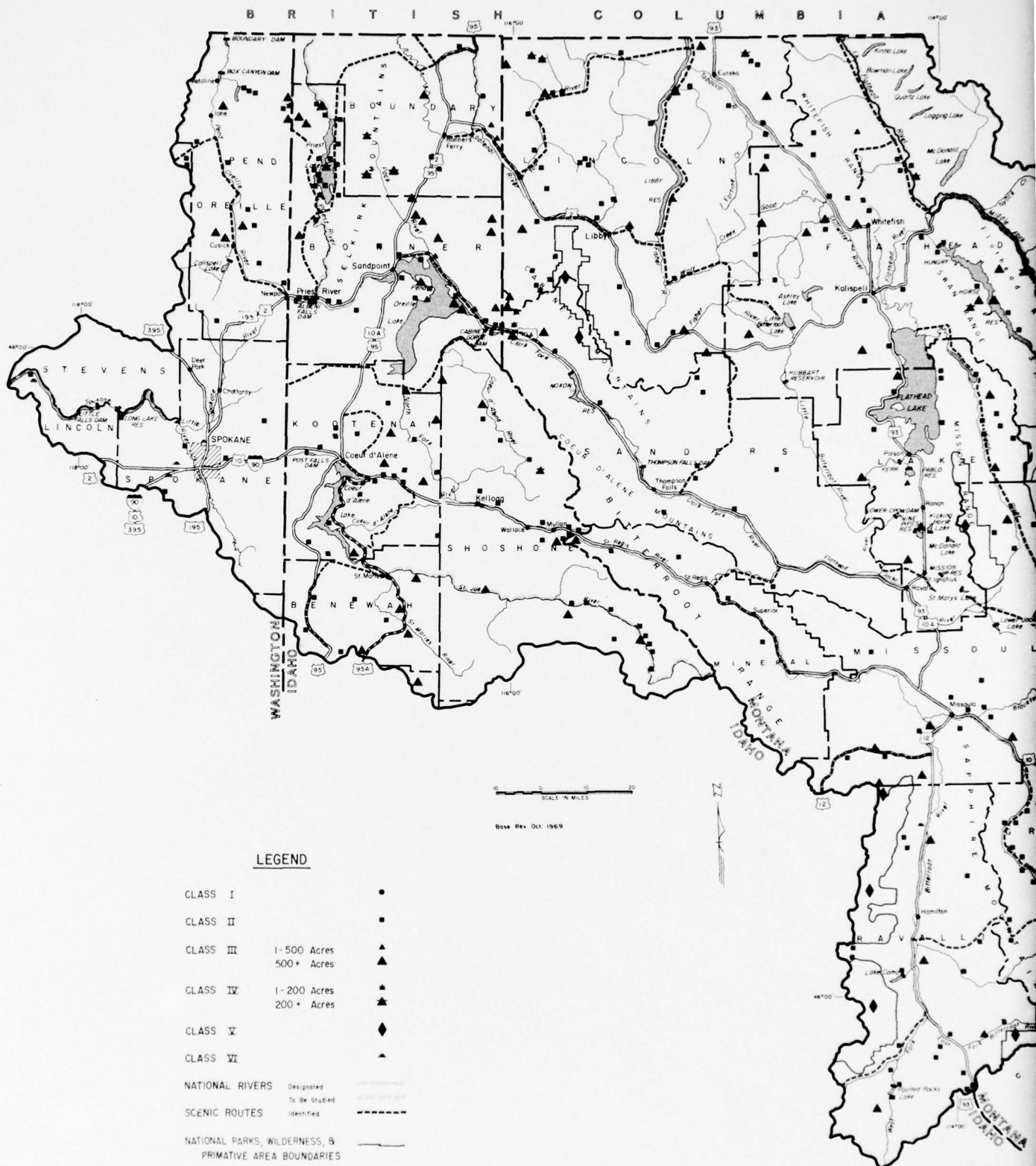
Outdoor recreation and tourism is an important industry. The topography, climate, vegetation, and wildlife provide for a wide range of opportunities. The value of the recreation resources is indicated by the recreation use. This has resulted in an estimated annual expenditure of \$72 million by tourists and \$36 million by nontourists for a total of \$108 million. (22) These expenditures represent the equivalent of 12,000 employees and add considerably to the economy of the subregion. Although these figures may be impressive, there is ample room for additional growth since the recreation potential is only partially being utilized.

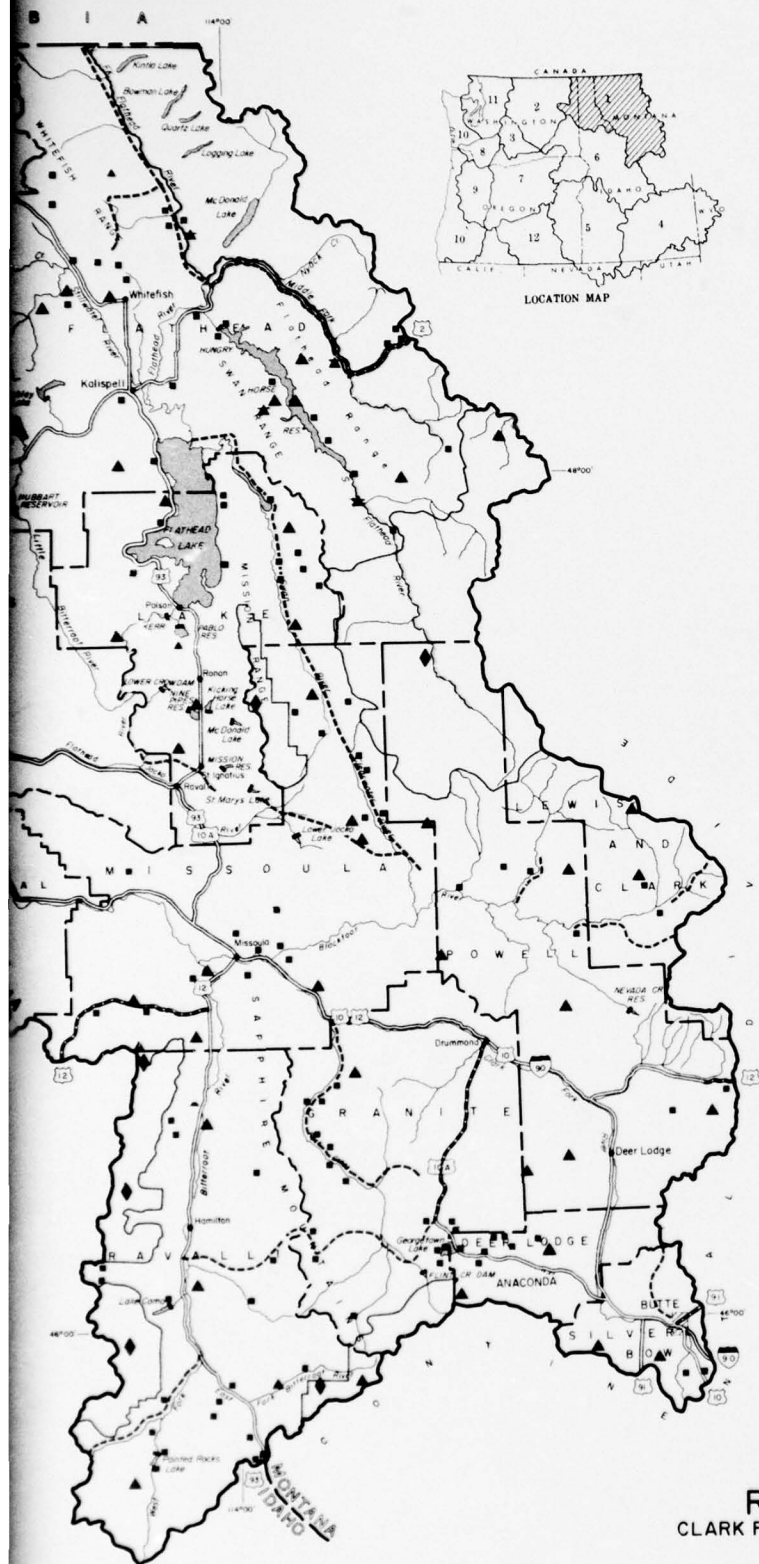
FUTURE DEMAND

The resident population of this subregion is projected to increase to about 699,000 by 1980, and to 1,140,400 by year 2020. The Spokane area is expected to increase at a rate slightly higher than the subregion as a whole. The growth rate of other population centers such as Missoula, Butte, Kalispell, and Anaconda, Montana, and Coeur d'Alene, Idaho, will also exceed the rate for the total subregion. The expected increase in recreation demand is shown in figure 4.

The abundant recreation resources of this subregion will continue to attract a large number of nonresident tourists. The continued improvement in transportation facilities will increase the impact of the nonresidents on the resources.

The demand for recreation is about 8 percent of the total demand for the region while the resident population is 9.6 percent. Because of the location of Spokane near the western edge of the subregion, a certain amount of this population seeks recreation in nearby subregions and Canada. Nonresident use is concentrated during the summer months.



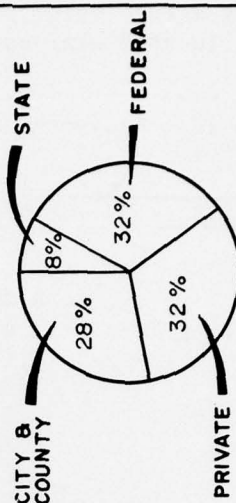


COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
RECREATION AREAS**
CLARK FORK, KOOTENAI, SPOKANE SUBREGION I

FIGURE 3

Table 18 - Recreation Use, Subregion 1, 1965

Land Administering Agency	Swim- ming	Boat- ing	Water Skiing	Fishing	Camping (1,000 Recreation Days)	Picnick- ing	Sight- seeing	Winter Sports	Hunt- ing	Other	Total
Forest Service	75	50	55	610	320	375	790	180	470	190	3,115
Bureau of Land Management		3		53	5	12	147	2	74	1	297
Bureau of Reclamation											
National Park Service	2			20	115	10	1,165			10	1,322
Corps of Engineers	30	5	5	5	20	20	30				115
Bureau of Sport											
Fisheries and Wildlife				8		18	58			12	96
Other Federal	2	6	1	11	3	28	45			9	105
State Agencies	125	53	15	191	78	177	374	150	25	89	1,277
County and Municipal	603	126	15	120	38	1,674	351			2,233	5,160
Private	278	81	30	492	164	788	960	550	256	934	4,533
Total	1,113	326	121	1,510	743	3,102	3,920	882	825	3,478	16,020



Demand for water-related activities, including those requiring actual water surface such as swimming and those enhanced by being located near water such as camping, is shown in table 19.

Table 19 - Projected Demand, Water Related Recreation
Subregion 1

Activity	1970	1980	2000	2020
		(1,000 occasions)		
Boating	3,300	4,300	8,500	15,500
Water Skiing	425	525	1,022	1,911
Swimming	3,145	3,876	7,552	14,123
Fishing	1,705	2,099	2,793	3,624
Sightseeing	5,345	6,590	12,838	24,009
Picnicking	4,235	5,221	10,173	19,024
Camping	2,774	3,420	6,662	12,461
Other ^{1/}	2,571	3,169	6,160	11,548
Total	23,500	29,200	55,700	102,200
Recreation Days ^{2/}	9,400	11,700	22,300	40,900

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day and rounded.

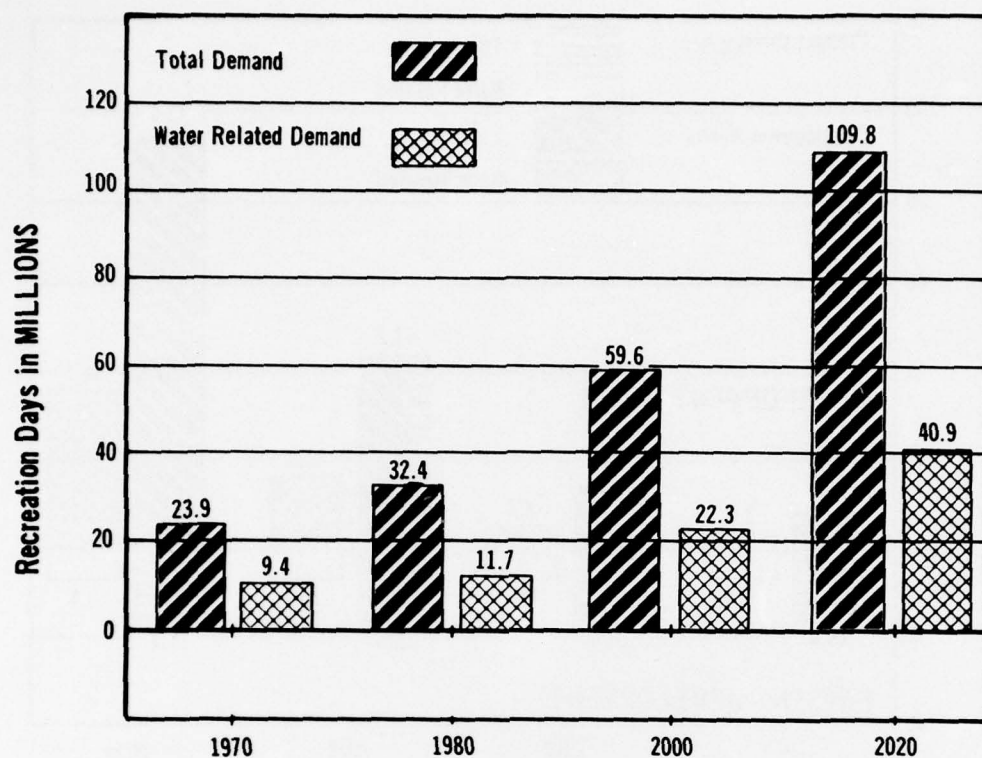


FIGURE 4 Expected Growth of Recreation Demand Subregion 1

OUTDOOR RECREATION NEEDS

Comparison of the estimated recreation demand for 1970 (23.9 million recreation days) and the expected 1970 use (16.4 million) indicates that about 69 percent of the total subregion's demand will be met by inventoried facilities. The amount of use at noninventoried facilities is not available at this time; however, the trend is more toward the use of developed facilities. An examination of the estimated potential of inventoried public recreation resource indicates that there is an abundance of resource. It must be considered, however, that some of this resource is not readily available for use or development. In many instances, the resource is not of a type that will support development needed by a nearby populated area.

There is a need to develop the existing resource to meet future demand. The development of facilities has lagged behind the increase in demand and unless steps are taken to increase the rate of development, serious overuse will be commonplace. The need for facility development is shown in figure 5.

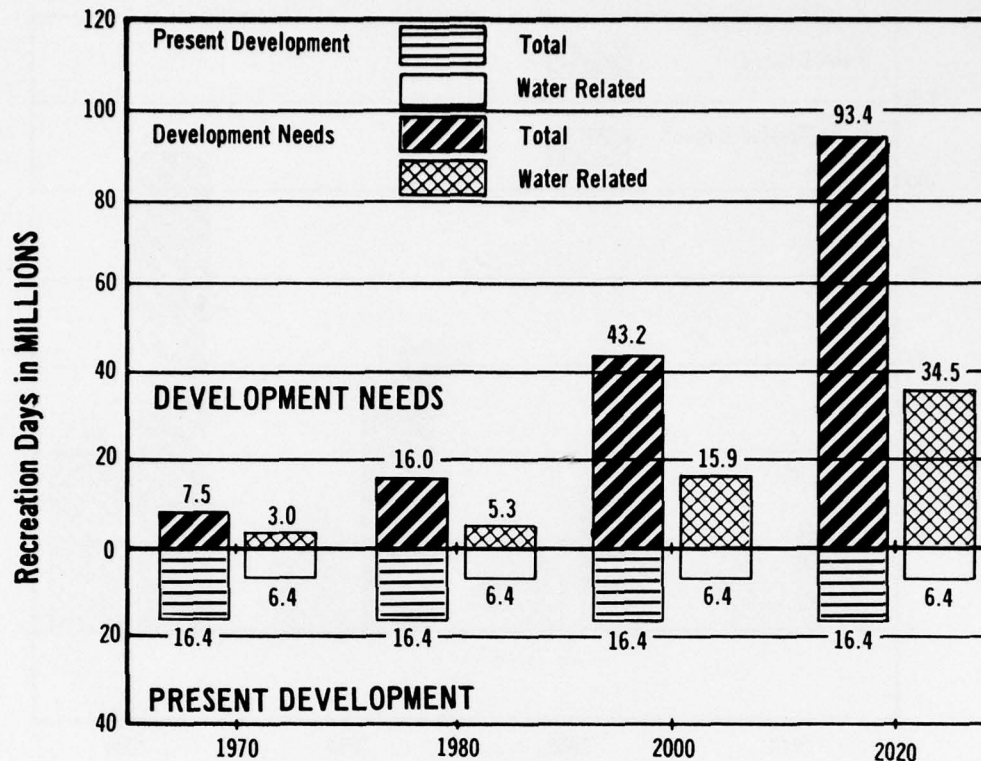


FIGURE 5 Need for Recreation Facility Development Subregion 1

MEANS TO SATISFY NEEDS

Protection of Resources

This subregion has outstanding scenic attractions of national significance which are of great importance to the economy of the area. Therefore, it is important to provide protection to these resources to maintain this base for future use. The high quality natural lakes, streams, and reservoirs provide abundant water-based recreation opportunities. The quality of some streams such as the Coeur d'Alene and Spokane should be improved. The quality of other streams should be protected against degradation.

Since the variety and abundance of recreation resources are the main attraction of this area to nonresident tourists, these resources should be protected. A program should be initiated to identify and set aside enough resource areas to satisfy future needs. Resources of natural, historic, and archeological value should be

set aside before private or public development projects encroach on them. More archeological information is needed on the ethnological characteristics of the ancient Indian tribes of the area.

Special studies are needed to determine the carrying capacity for recreation users on the fragile alpine areas. Those areas presently established such as Glacier National Park, Bob Marshall Wilderness, Mission Mountains, and Anaconda-Pintlar Primitive Area along with attractions such as the State parks, wildlife areas, and the many historical sites should be preserved and maintained to protect future values.

To assure the maintenance of a proper balance between stream, lake, and reservoir recreation, it is essential to set aside certain streams and segments of streams free of impoundments. The establishment of free-flowing rivers would preserve the natural setting, water quality, and fulfill other conservation purposes.

The present opportunities for a system of wild, scenic, and recreational rivers in this subregion are excellent. The Priest, Moyie, and St. Joe Rivers in Idaho, and the North Fork and portions of the South and Middle Forks of the Flathead River in Montana, have been selected for study to determine their appropriateness for inclusion in the national system. These streams are identified on figure 6, Potential Recreation Areas.

In addition to the streams designated for study, table 20 contains streams and stream segments which have value for recreational uses. These streams warrant further investigation to determine their optimum scenic and recreational values. Not all would require complete preservation and some may be enhanced by augmented flows during the summer or increases in water quality. This initial list is not intended to limit consideration to just these stream segments. A thorough analysis may reveal other streams of equal or higher potential.

Table 20 - Principal Recreation Streams, Subregion 1

Description	Miles	Acres at 320/mile
<u>Rivers Designated for the Study in the Wild and Scenic Rivers Act (P.L. 90-542 Sec. 5(a))</u>		
Priest River - the entire main stem.	68	21,760
Moyie River - Canadian border to its confluence with the Kootenai River.	24	7,680
St. Joe River - the entire main stem. Flathead River	132	42,240
North Fork - Canadian border to its confluence with the Middle Fork.	59	18,880
Middle Fork - origin to confluence with the South Fork.	91	29,120
South Fork - origin to Hungry Horse Reservoir.	60	19,200
<u>Rivers Selected for 5(d) Status under the Wild and Scenic Rivers Act, P.L. 90-542</u>		
Blackfoot - segment from Landers Fork to Milltown Dam.	100	32,000
Other		
Coeur d'Alene River - origin to Enaville.	65	20,800
Spokane River - origin to its confluence with the Columbia River.	51	16,320
Stillwater River - north city limits of Kalispell to upper Stillwater Lake.	42	13,440
Swan River - origin to Swan Lake.	47	15,040
Rock Creek - origin to confluence with Clark Fork.	51	16,320
St. Maries River - origin to confluence with the St. Joe River.	45	14,400
Middle Fork - origin to confluence with West Fork.	9	2,880
West Fork - origin to confluence with Middle Fork.	5	1,600
Kootenai River - Libby Dam to Canadian border.	65	20,800
Bitterroot River - junction of the West and East Forks to its confluence with the Clark Fork River.	80	25,600
Bull River - confluence of Smith and middle forks to Cabinet Gorge Reservoir.	27	8,640
Thompson River - outlet of Lower Thompson Lake to confluence with Clark Fork River.	44	14,080
Pend Oreille - Pend Oreille Lake to Canadian border.	<u>103</u>	<u>32,960</u>

Table 20, Continued

Description	Miles	Acres at 320/mile
Total Miles Federal Study Rivers Section 5(a)	434	138,880
Total Miles Section 5(d)	100	32,000
Total Miles Other Rivers	634	202,880
Subregion Total Miles and Land Acreage (Impoundments not included)	1,168	373,760

In addition to the 1,300 miles of existing scenic roads, there are approximately 560 miles of potential additions that should be evaluated. The location of these additions is shown on the map figure 6. This study has also identified another four areas containing about 270,000 acres that should be studied to determine their value for establishment as roadless or wilderness. The general location of these areas is shown on figure 6.

Development of the Resource

Table 21 lists the estimated requirement for land and water by activity.

Table 21 - Land and Water Requirements for Water Related Demand, Subregion 1

Activity	1970	1980	2000	2020
		(Acres)		
Camping and Picnicking				
Land	3,300	4,400	8,100	15,100
Water	6,600	8,800	16,200	30,200
Swimming				
Land	50	60	120	220
Water	150	180	360	660
Boating and Water Skiing				
Land	480	530	1,080	1,970
Water	28,875	34,950	67,800	124,800
Shoreside Hiking				
Land	600	800	1,200	2,200
Water (not determined)				
Total Land (rounded)	4,400	5,800	10,500	19,500
Total Water (rounded)	35,600	43,900	84,400	155,700

There may well be needs for additional land and water when the area of consideration is limited to specific areas within the subregion. This is especially true within the day-use zones of the larger population concentrations and along the major routes of travel. There also may be imbalances between supply and demand when an analysis is made on the basis of the level of government. City and county areas are usually designed to accommodate intensive day use while remote areas under Federal and State jurisdiction provide for overnight and/or day uses. Studies have indicated that about 60 percent of the total demand generated from a population center is for close-in, day-use areas while 30 percent is for weekend trips of up to 125 miles. The relationship of Spokane to Lake Coeur d'Alene (31 miles), Pend Oreille (55 miles), and Priest Lake (85 miles) is a good example.

Table 22 is an estimate of acquisition and development needs by level of administration.

Table 22 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 1

	(1) Land/ Inventory BOR I & II	(2) Existing/ Facility Development	(3) Water Related/ Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	69.5	2.6	1.5	2.7	5.1	-	-	-	-	.1	2.5
State	3.3	.3	.7	1.3	2.3	-	-	-	.4	1.0	2.0
County and Municipal	.4	.2	1.9	3.4	6.2	1.5	3.0	5.8	1.7	3.2	6.0
Private	.3	.3	1.7	3.1	5.9	-	-	-	1.4	2.8	5.6
Total	73.5	3.4	5.8	10.5	19.5	1.5	3.0	5.8	3.5	7.1	16.1

1/ Data from table 16 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

2/ Data from table 17 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

3/ Data from figure 5.

Note: Column (4) is derived by subtracting column (1) from column (3). Column (5) is derived by subtracting column (2) from column (3). A dash indicates no need to accelerate existing programs. A surplus from one level of government will not satisfy a deficit in another level.

Activity Development Needs

The following discussion considers water related recreation development needs as viewed from specific activities:

Swimming

The cool climate and the low water temperatures of most of the subregion's lakes and streams limit swimming. However, there is still a demand for additional swimming beaches. The acreage necessary to meet this future demand amounts to 50 acres in 1970; 60 acres in 1980; and 220 acres by 2020. The existing water surface supply and distribution are more than adequate to accommodate all needs. Therefore, the primary need is to develop additional beach

[illegible]

Base Rev. Oct. 1969

DEVELOPMENT ZONES

ROADLESS AREAS

RECREATION RIVERS

SCENIC ROADS

NOTE: Zone boundaries are diagrammatic



FIGURE 6

areas with attendant facilities such as docks, floats, and sanitary facilities. There is a pressing need in most of the urban areas to provide additional pool space to accommodate swimming activities.

Boating

The following table lists the estimated number of pleasure boats and projections.

Table 23 - Pleasure Boat Projections^{1/}, Subregion 1

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	27,000	32,600	63,300	116,400
Car Top	4,600	5,600	10,800	20,000
Moored	5,400	6,500	12,700	23,300
Stored	<u>1,500</u>	<u>1,900</u>	<u>3,600</u>	<u>6,700</u>
Total	38,500	46,600	90,400	166,400

^{1/} Based on preliminary data from Survey of Boating Needs, State of Idaho, State of Washington, and Walla Walla District, Corps of Engineers, 1969.

On the basis of the above information, the estimated number of lanes of boat launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
225	245	475	873

The need for water to operate the boats includes running water for the canoes, prams, kayaks, rubber rafts, and other float boats. Boating rivers need public access points to allow trips from a few hours to several days in length. River cruising and float-boating constitute only a small percentage of total boating use. The bulk of the boating takes place on the lakes and reservoirs. Fishing, cruising, and water skiing are the primary uses with the peak days occurring on weekends of July and August. To meet the needs of the boating public, additional water access sites will be needed along with additional boat storage and moorage. Docks, floats, marinas, launching ramps, hoists, and other facilities to support this activity need to be expanded. The greatest pressure will be on the lakes and reservoirs of eastern Washington and northern Idaho portions of the subregion. A total of 480 acres of land will be required in 1970, 530 acres by 1980, 1,080 acres by year 2000, and 1,970 acres by year 2020. Most of this developed land acreage, to be effective, should be located on waters that are presently receiving the highest use.

Camping and Picnicking

The need for additional camping and picnicking sites associated with water will be adjacent to the main routes of travel with a concentration near the Spokane population center and on waters close to Glacier National Park. Whitefish and Flathead Lakes, along with Hungry Horse Reservoir, will be prime locations to handle overflow crowds from Glacier National Park. Other areas that serve as access points to the remote back-country will also be prime areas. In the vicinity of Spokane, the main burden will fall on the local governments and the private sector to supply the needed lands and developments. The acreage needs are estimated to be 3,300 acres in 1970, 4,400 in 1980, 8,100 acres by year 2000, and 15,100 acres by 2020.

Hiking and Riding

There are several thousand miles of trails in Glacier National Park and the national forests that, along with other trails on Indian lands, should be adequate to satisfy most of the demand for back-country travel. The proposed Continental Divide Trail extends along the entire eastern boundary of the subregion, a distance of over 300 miles. This trail is the north end of the 3,082-mile route from Canada to Silver City, New Mexico, and may become a part of the national system. The most urgent need for trails is within and near metropolitan areas such as Spokane, Butte, and Missoula. An estimate of need for such trails would be to reach the standard for each 50,000 residents of 25 miles of foot trail, 5 miles of bridle paths, 25 miles of bicycle trails. Studies are needed to determine the best locations for these trails. Abandoned railroad rights-of-way, canal banks, power lines, and old logging roads are possibilities. Nature walks in miles and acres 1970 - 600 acres; 1980 - 800 acres; 2000 - 1,200 acres, and 2020 - 2,200 acres.

Driving for Pleasure and Sightseeing

This subregion contains some of the outstanding scenery of the West and has many miles of surfaced scenic roads of national renown. It is particularly important to develop additional scenic roads throughout most of the subregion to enhance these activities. Figure 4 shows some possible routes that might be developed. The drives along the lakes and rivers are important for providing access for other recreational uses as well as driving for pleasure and sightseeing. The interpretation of natural features, wildlife, history, and scenic vistas should be incorporated into the routes of travel. A potential of 1,300 miles of scenic roads is shown on figure 4.

Winter Sports

The development of winter recreation in this subregion is just beginning to emerge. The potential for more winter sports areas for skiing, ice boating, cross-country skiing, wildlife observation, oversnow vehicle use, and ice fishing are tremendous. The development of these aspects could increase the annual capacity of the developed supply by extending the season of use. Private investment in the ski facilities will continue to be the most important factor to the growth of the ski industry. The basic ingredients for successful ski operations are abundant throughout the subregion.

COST OF RECREATION PROGRAMS

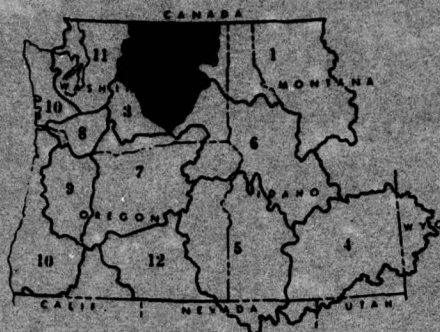
To provide the necessary facilities, land, access, and programs to accommodate the projected demand will require a substantial increase in the budgets of recreation administering agencies. Table 24 lists development and study costs.

The costs are listed as capital investment, which includes land acquisition and development, study costs to further identify the potential of preserving land or water areas or additional scenic roads, and the annual operation and maintenance costs. Capital costs are based on \$4.15 per recreation day to be satisfied, and the annual operations maintenance and replacement costs are based on 25¢ per user day on the last year of the time period associated with the increased use. The study costs are based on estimates of man-years of effort required to complete these studies. While all studies are recommended to be started during the initial period, it is unlikely all would be completed during this time frame.

Table 24 - Development and Study Costs of Recreation Programs,
Subregion 1

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	21,995	43,990	77,190	143,175
Annual O, M & R	1,325	2,650	4,650	8,625
Study Costs ^{1/}				
Free-flowing Rivers	569	-	-	569
Roadless Areas	222	-	-	222
Scenic Roads	14	-	-	14
Total	24,125	46,640	81,840	152,605

^{1/} Study carryover costs not determined.



LOCATION MAP

W 20-000000

SUBREGION 2

UPPER COLUMBIA

PRESENT STATUS

The Recreation Setting

The Upper Columbia Subregion encompasses the Columbia River watershed from Pasco, Washington, north to the Canadian border, except for the Yakima and Spokane Rivers. The subregion has an area of 22,451 square miles and is situated entirely within eastern Washington. It is an area of contrasts in topography, climate, and vegetation. Prominent features in the subregion include the Cascade Range in the western portion, the Okanogan Highlands to the north, and the Columbia River, which flows north to south. These and other features in the subregion provide a panorama of changing landform, manmade and natural water areas, and diverse vegetation.

Sites of historical significance are singularly scarce within the subregion due in part to the closing of much of eastern Washington to settlement during the Indian wars. David Thompson of the Northwest Company built canoes for travel down the Columbia River at Kettle Falls. Fort Colville, near the town of Colville, was established in 1859 to protect travelers on the way to gold fields and settlers in the area, many of whom were discouraged miners. Fort Okanogan at the mouth of the Okanogan River, the site of the first white settlement in the State of Washington, has been established as a state historical site. Fort Spokane at the mouth of the Spokane River is another point of interest.

The aboriginal inhabitants of the Upper Columbia were principally Salishan groups such as the Columbia, Wanapum, Sanpoil, and Nespelem. Archeological research suggests that the area has been inhabited for more than 10,000 years. The archeological resources of the area are not uniformly known. The Columbia River has been surveyed in sections and sporadic surveys have been conducted in the Grand Coulee. Except for the stretch between Priest Rapids and Pasco, the Columbia is entirely flooded by reservoirs, so archeological sites along most of the river are no longer available. A long-range program of intensive excavation in the still unflooded section of the Columbia would be exceedingly profitable.

Recent minor surveys along some of the undammed rivers tributary to the Columbia indicate the area still has a rich potential for archeological research and for research in related sciences.

The climate of the subregion varies significantly. Annual precipitation ranges from a minimum of around 10 inches in the arid eastern lowlands to over 80 inches in the western mountainous area. Summers are conducive to outdoor living, including many forms of water related recreation activities. In winter, the subregion offers opportunities for skiing and other sports activities associated with snow.

Natural vegetation varies greatly within the subregion because of the wide differences in elevation, temperature, and precipitation. The lower central, eastern, and southern portions contain desert-type vegetation such as sage and short bunchgrass. Areas adjacent to stream courses generally support small, deciduous woodlands. The density of the vegetation increases with altitude in the western and northern parts of the subregion. The mountainous areas contain fairly heavy coniferous forests of pine, larch, and fir.

The abundant and varied water resources of the subregion provide excellent opportunities for the sports fisherman. In addition, the many forms of wildlife which inhabit the subregion make it one of the best hunting areas of the region.



Columbia Basin Project, Washington Evans Camp, located on Lake Roosevelt about 35 miles from the Canadian border, attracts many visitors to its excellent swimming, boating and camping facilities. (Bureau of Reclamation Photo)

In 1965, the population of the Upper Columbia Subregion was 198,600. (17) Resident population is well distributed between the urban and rural areas. A heavy influx of vacationists from the Puget Sound area of Washington frequent this subregion to obtain a "sun break," particularly during prolonged seasons of rain common to the coastal region.

Transportation routes are well developed within the subregion. Access to areas of interest is provided by major east-west and north-south highway routes and by commercial air facilities at major cities.

Available Outdoor Recreation Resources

Major Recreation Areas

Coulee Dam National Recreation Area This area includes Grande Coulee Dam, the largest single structure built by man, and Roosevelt Lake which is 150 miles long, extending from the dam to the Canadian border, and has a surface area of some 80,000 acres.

Sun Lakes State Park This park includes several lakes. Also in the park is Dry Falls, a prehistoric Columbia River cataract that was more than 400 feet high and 3-1/2 miles long. It was greater than any falls known today. Recently, several ancient Indian caves have been discovered in the park.

Ginkgo Petrified Forest This is one of the world's finest petrified forests. Over 200 species of trees have been identified.

Lake Chelan This is one of the deepest lakes in the United States. It is about 51 miles long and is situated in a deep, V-shaped valley. The upper end is included in the recently established Lake Chelan National Recreation Area.

Columbia Basin Project The project area contains several impoundments and seep lakes offering excellent opportunities for water sports and fishing. These water areas are very popular with the residents of western Washington.

Columbia River Impoundments These include Rufus Woods Lake behind Chief Joseph Dam, Wells Reservoir, Entiat Lake behind Rocky Reach Dam, Rock Island Reservoir, Wanapum Reservoir, and Priest Rapids Reservoir.

Wilderness Areas Major portions of the Glacier Peak and Pasayten Wildernesses are in the subregion. They contain outstanding mountain scenery, many glaciers, and a cross section of forest types and alpine flora.

North Cascades National Park A portion of this recently established park lies within this subregion.

Columbia National Wildlife Refuge This refuge is located just south of the Potholes Reservoir, Columbia Basin Project. The numerous seep lakes make it one of the outstanding refuges in the region.

Skiing Areas The Northern Cascades and other mountains in this subregion contain many popular ski areas of which Stevens Pass, Squillchuck, and Leavenworth are most popular.



Columbia Basin Project, Washington, view of Summer Falls showing the recreation area which was developed by the Job Corps. (Bureau of Reclamation Photo)

Table 25 is a summary of some of the existing major recreation resources of the subregion.

Table 25 - Major Recreation Resources in All Ownerships, Subregion 2

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	17	223.3	
Lakes and Other Slack Water	28	19.6	
Other Water			
Small		30.8	
Large		45.2	
Total Water Surface		318.9	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	4		176
Established Roadless Areas	2	653.1	
Established Scenic Roads			400

Source: Tables 1, 7, and 8.

Existing Supply

Table 26 shows the reported acreages of land within the Upper Columbia Subregion used for, or suitable for, recreation by Bureau of Outdoor Recreation land classes. Acreages administered by the various levels of government and those of the private sector in the subregion are also shown in the table.

Of the total public land and water areas inventoried as available for recreational use in the Columbia-North Pacific Region, the Upper Columbia Subregion contains approximately 6 percent of the lands and 15 percent of the water surface. At present this subregion has an adequate supply of recreational land and water resources distributed rather evenly throughout the area.

About 78 percent of the total classified recreation area reported for the subregion was in Bureau of Outdoor Recreation Class III, natural environment areas. The second largest category, amounting to about 17 percent, was in Bureau of Outdoor Recreation Class V, primitive areas.

There are over 8 million acres of private lands within the subregion which include areas of high recreational values. Private enterprise represents an important part of the subregion's developed recreational opportunities. These include private developments for camping, skiing, boating, fishing, and other activities. Many of the private areas complement the opportunities which are offered at nearby public lands.

Table 26 - Acreage of Inventoried Lands by BOR Classes, ^{1/}
Subregion 2, 1964

<u>Class</u>	<u>Federal</u>	<u>State</u>	<u>County</u> (1,000 Acres)	<u>City</u>	<u>Private</u> ^{2/}	<u>Total</u>
I	0.16	0.03	-	0.13	-	0.32
II	11.87	176.39	0.01	5.21	-	193.48
III	3,259.01	109.18	0.03	0.07	-	3,368.29
IV	1.24	0.88	-	-	-	2.12
V	726.10	0.92	-	-	-	727.02
VI	0.59	0.01	-	-	-	0.60
Total Classed	3,998.97	287.41	0.04	5.41	-	4,291.83
Not Classed	<u>704.23</u>	<u>643.89</u>	<u>18.76</u>	<u>9.89</u>	<u>8,412.20</u>	<u>9,788.97</u>
Grand Total ^{3/}	4,703.20	931.30	18.80	15.30	8,412.20	14,080.80

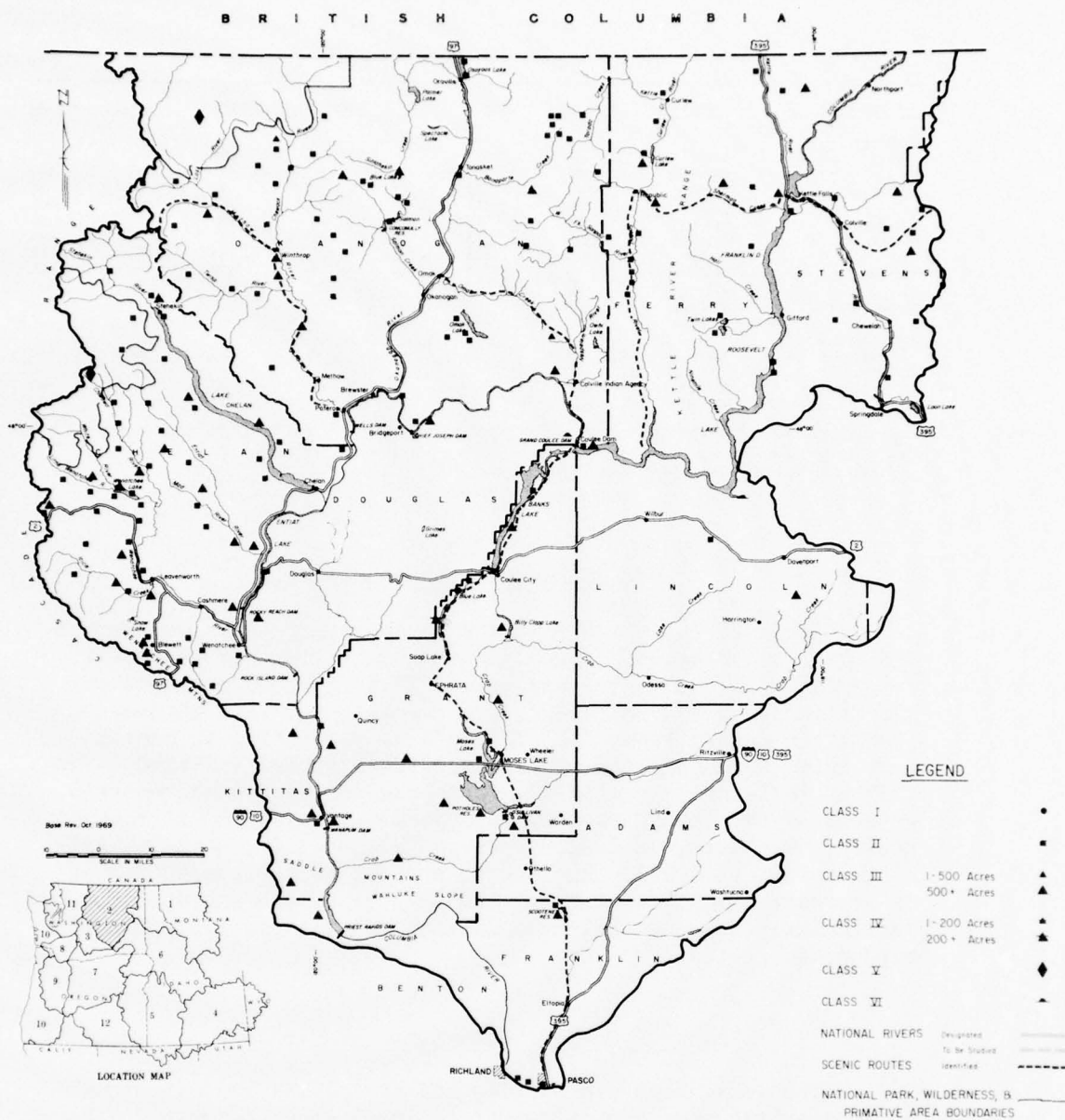
^{1/} BOR classes are defined in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Lands and Mineral Resources.

The general locations of the existing recreation resources are indicated on figure 7.

Table 27 lists reported information on the extent of recreation development in the subregion. This list includes only those facilities for which information was uniformly available.



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
RECREATION AREAS**
UPPER COLUMBIA SUBREGION 2

FIGURE 7

Table 27 - Facility Development, Subregion 2

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	694	189	-	9	892	-	892
	Units	1,391	1,093	-	117	2,601	-	2,601
Trailer	Acres	41	21	-	8	70	-	70
	Units	98	139	-	120	357	645	1,002
Group	Acres	156	18	-	5	179	-	179
Picnicking	Acres	213	153	4	47	417	-	417
	Units	852	888	3	191	1,934	-	1,934
Marinas	Number	21	3	-	2	26	NA	26
	Slips	92	74	-	201	367	NA	367
Winter Sports	Number ^{1/}	3	-	-	-	-	1	4
	Lifts or Tows	13	-	-	-	-	4	17
Swimming Beaches (Organized)	Acres	25	28	-	8	61	NA	61
Parks and Playgrounds	Number	3	-	1	43	47	-	47
	Acres	18	-	47	247	312	-	312

- Not Reported

NA - Not Available

^{1/} Located on Federal land, operated by private.

Use of Recreation Resources

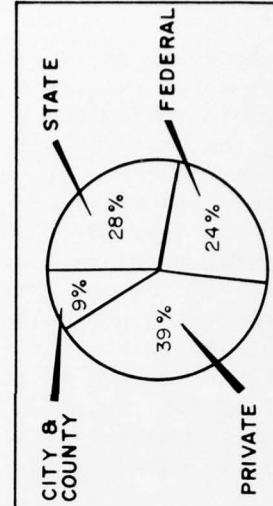
Table 28 lists the reported outdoor recreation use for 1965 in the subregion by agency and by activity. Of the total usage shown in the table, approximately 27 percent occurred on private areas based on the Chilton report on private outdoor recreation enterprises. (3) The data on visitation to public facilities were supplied by the individual agencies listed. The 1965 recreational use within this subregion represented about 5 percent of the total reported for the Columbia-North Pacific Region. The vast, uncrowded open space and drier, sunny climate of this subregion will continue to attract an increasing number of recreationists from the more densely populated subregions, particularly where climatic conditions are less suited for many outdoor activities.

Value of Outdoor Recreation and Tourism

The recreation and tourist industry is an important part of this subregion's economy as it is in all the Columbia-North Pacific. In recent years, annual recreation expenditures within the Upper Columbia Subregion have included \$44 million by tourists and \$22 million by nontourists, based on a study conducted by the Bonneville Power Administration. (22) The \$66 million total represents 7,300 employees. These expenditures add considerably to the subregion's economy but at present represent utilization of only a small part of the outdoor recreation and tourism potential of the area.

Table 28 - Recreation Use, Subregion 2, 1965

Land Administering Agency	Swim- Boat-		Water Skiing	Fishing	Picnick- ing		Sight- seeing	Winter Sports	Hunting	Other	Total
	ming	ing			Camping	(1,000 Recreation Days)					
Forest Service	10	5	5	90	145	125	295	115	130	180	1,100
Bureau of Land Management		1		8	1	5	35	1	6	3	60
Bureau of Reclamation	1				1		791				793
National Park Service	126	60	32	12	72	150	295		3		750
Corps of Engineers		10		10	10	20	55			10	115
Bureau of Sport Fisheries & Wildlife				58	3	2	25		10	9	107
Other Federal	1	1		42	5	44	100		8	54	255
State Agencies	285	161	166	600	156	674	997	46	165	278	3,528
County and Municipal	129	31		6	1	378	59			478	1,082
Private	153	74	56	1,878	109	383	727	170	1,047	288	4,885
Total	705	343	259	- 2,704	503	1,781	3,379	332	1,369	1,300	12,675



FUTURE DEMAND

In order to obtain a general indication of the magnitude of theoretical water related outdoor recreation demand within the Upper Columbia Subregion, projections of the subregion population were among the basic factors considered. According to data developed for Appendix VI, Economic Base and Projection, the subregion population will increase from about 199,000 in 1965, to 431,000 by the year 2020. These projections would indicate a nominal annual population growth rate of about 1-13/32 percent (compounded) during the period from 1965 to the year 2020. In 1965 the subregion population represented about 3.4 percent of the Columbia-North Pacific regional total. The population growth rate of this subregion to the year 2020 is expected to be slightly less than for the region as a whole. The subregion population will probably continue to represent about 3.4 percent of the regional total by the year 2020.

Other basic factors which were considered in estimating demand included income, mobility, and available leisure time. Projections of the per capita income for the subregion are only slightly higher than for the Columbia-North Pacific Region as a whole. Indications are that differences between the subregion and regional population concerning future trends in mobility and available leisure time are also generally insignificant.

The expected growth of recreation demand in the subregion is shown in figure 8. The figure shows both the expected future trend of the total recreation demand and of only the water related recreation demand.

The estimated demand for outdoor recreation in this subregion will constitute from about 4.8 percent in 1970, to 4.5 percent in 2020 of the total Columbia-North Pacific Region. While the subregion population will represent about 3.4 percent of the regional total during the period to the year 2020, a significant portion of the demand will be generated from outside the subregion.

As noted previously, an important element in the determination of outdoor recreation demand within a given area is the impact from those residing outside the area. This is of particular importance in the case of the Upper Columbia Subregion where much of the outdoor recreation use is by nonresidents. The features which attract visitors from outside the subregion are many; notable among them are the clear, sunny climate, the availability of many and varied water areas, forested mountains, unique geologic and engineering features of large proportions, abundance of sport fisheries and wildlife, wide open spaces, and good access.

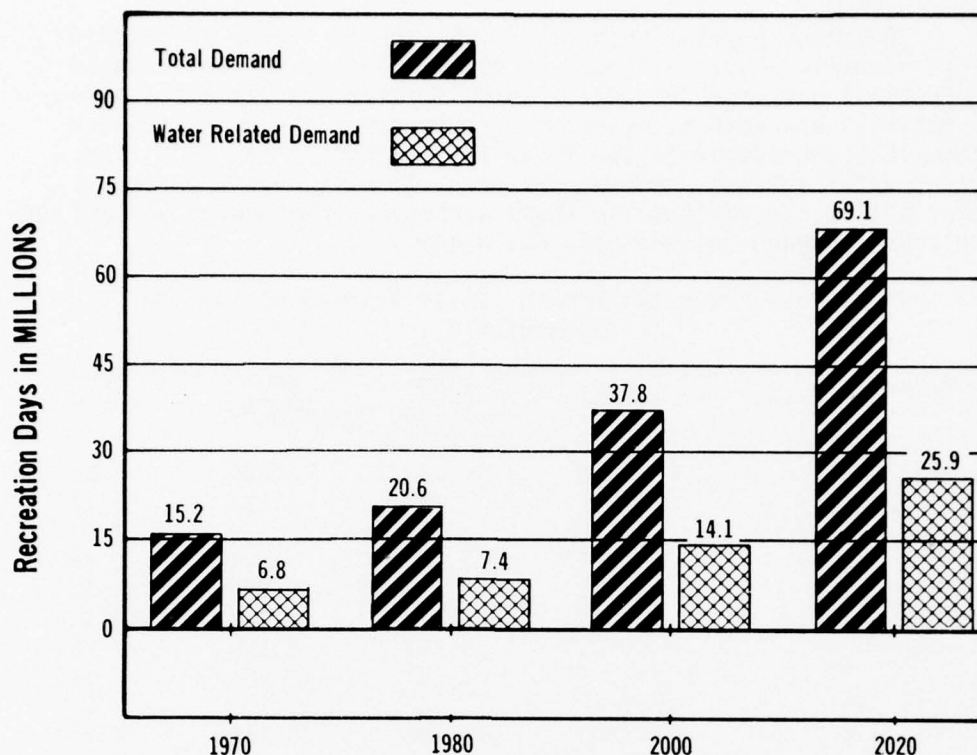


FIGURE 8 Expected Growth of Recreation Demand Subregion 2

The recreation market area, from which most of the persons recreating within the subregion would come, encompasses the entire State of Washington, northern Oregon, northern Idaho, northwestern Montana, and southern British Columbia, Canada. This determination was based on recreation user survey data, existing competitive recreation opportunities, regional access features, population distribution, and travel time. In 1965, this recreation market area had a population of about 5 million and by the year 2020 it is expected to reach over 12 million. This population includes those projected for the Seattle-Tacoma, Portland, and Spokane metropolitan areas as well as numerous other urban centers. The impact of State Highway 20 presently under construction and the newly established North Cascades National Park will be reflected by increasing recreation pressure from in-state and out-of-state residents visiting or passing through the subregion. The subregion contains certain features such as Grand Coulee Dam which attract visitors from more distant areas, on an international level as well as from every region of the United States.

Based on population projections, future trends in certain socio-economic characteristics of the population and anticipated nonresident use, the demand for water related activities as shown in table 29 was determined for the subregion. The water related activities considered in the table include both those requiring actual water surface, such as swimming, fishing, boating, and water skiing, in addition to those activities that occur on land but are enhanced when located near the water.

Table 29 - Projected Demand, Water Related Recreation
Subregion 2

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	1,450	1,600	2,800	5,200
Water Skiing	287	302	633	1,219
Swimming	2,125	2,234	4,679	9,012
Fishing	3,052	3,758	4,975	6,489
Sightseeing	3,612	3,798	7,955	15,320
Picnicking	2,862	3,010	6,303	12,140
Camping	1,875	1,971	4,129	7,952
Other ^{1/}	1,737	1,827	3,826	7,368
Total	17,000	18,500	35,300	64,700
Recreation Days ^{2/}	6,800	7,400	14,100	25,900

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

OUTDOOR RECREATION NEEDS

A comparison of recreation demand and the reported use provides some indication as to the extent to which the subregional demand is being met by the inventoried recreation facilities. As shown in table 28, the recreation use reported in 1965 for the subregion involved some 12,675,000 recreation days. A significant portion of this use involved facilities not included in the 1963-1964 inventory, or little or no facilities at all. Bearing this in mind, the 1965 use was projected to 1970, based on historical trends in recreation use within the subregion. This resulted in a projected 1970 use of about 14,500,000 recreation days. Figure 9 compares future recreation demand with the estimated 1970 use and shows the difference as an indication of facility needs in terms of recreation days. It must be pointed out that about 60 percent of the projected 1970 use would involve sightseeing,

fishing, and hunting. Since these activities are not generally associated with extensive facility development, the need for facilities for some of the other activities would be much greater than that indicated by figure 9.

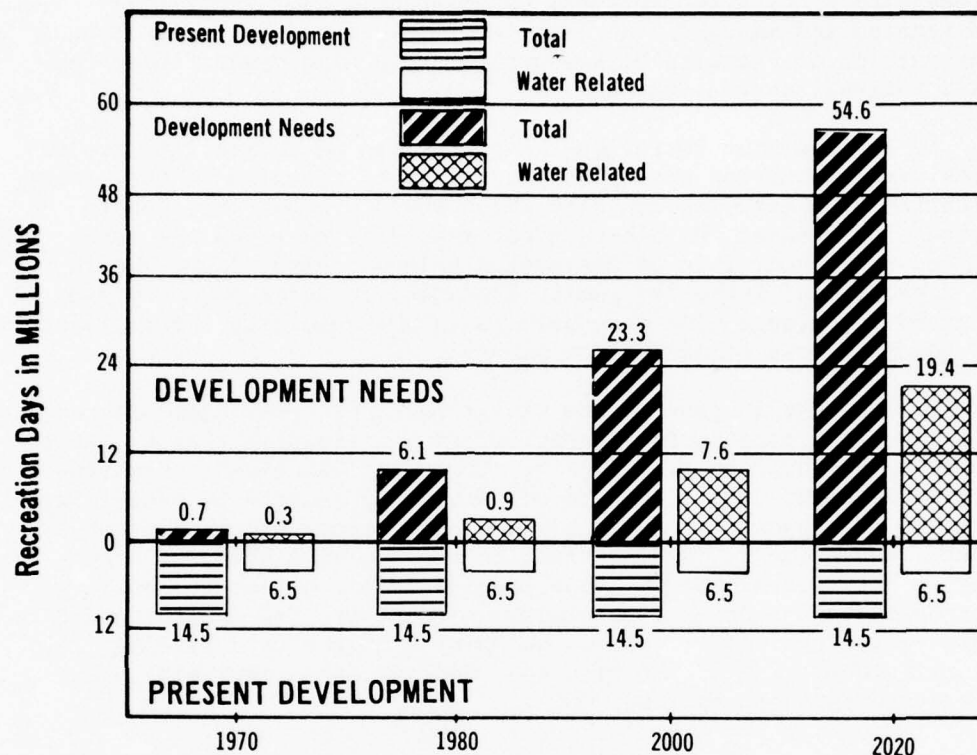


FIGURE 9 Need for Recreation Facility Development Subregion 2

MEANS TO SATISFY NEEDS

Protection of Resources

Water resource development has materially influenced the way of life in this subregion. Most of the once rampant Columbia River now has become a series of water impoundments. Vast areas now producing irrigated crops were once open desert. These changes have created an entirely new landscape pattern of visual and esthetic import. Specific studies of these patterns and the historical, archeological, and ecological associations are needed to permit alinement of cultural values with the esthetic values of

the natural resources such as the designated wilderness areas to achieve the objective of environmental quality. There should be a view toward balanced participation and coordination by all levels of government and by the private sector to assure the preservation and availability of these resources for generations to come. Areas with special recreational values should be appropriately designated and managed. An example of this would be congressional designation of Franklin D. Roosevelt Lake behind Grand Coulee Dam as a national recreation area.

An important factor in the protection of recreation involves consideration of the ecological character of the area in the determination of a carrying capacity which would prevent loss due to overuse or misuse. Developed areas should be operated and maintained to prevent loss of recreation values. Also, there should be a program of intensive public education to develop understanding and compliance with necessary rules and regulations formulated to guide the use of recreation areas.

In order to provide the widest range of water-based recreation opportunities in the subregion, it is essential that at least some balance between free flowing stream and slack water opportunities be maintained. This is of particular importance concerning streams that pass through population concentrations or along major routes where the level of recreation use would be high. The subregion has several streams that provide opportunities for both streamside use such as sightseeing, picnicking, and camping and water-based activities such as swimming, boating, and fishing. A preliminary list of the principal recreation streams within the subregion is shown on table 30.

Table 30 - Principal Recreation Streams, Subregion 2

Description	Miles	Acres at 320/mile
Rivers selected for 5(d) status under the Wild and Scenic Rivers Act, P.L. 90-542.		
Wenatchee River - entire river including Lake Wenatchee.	59	18,880
White River - from origin to Lake Wenatchee.	27	8,640
Chiwawa River - from origin to its confluence with the Wenatchee River.	33	10,560
Columbia River - from Priest Rapids Dam to McNary Pool.	57	18,240
<u>Other</u>		
Methow River - from origin to confluence with the Columbia River.	83	26,560
West Fork Methow River - from its origin to its confluence with the Methow River.	14	4,480
Twisp River - from its origin to its confluence with the Methow River.	28	8,960
Sanpoil River - from origin to confluence with the Columbia River.	64	20,480
West Fork Sanpoil River - from origin to confluence with the Sanpoil River.	21	6,720
Little Wenatchee River - from its origin to Lake Wenatchee.	17	5,440
Similkameen River - from Canadian Border to its confluence with the Okanogan River.	27	8,640
Entiat River - from origin to confluence with the Columbia River.	48	15,360
Okanogan River - Osoyoos Lake to its confluence with the Columbia River.	75	24,000
Total Miles Section 5(d)	176	56,320
Total Miles Other Rivers	377	120,640
Subregion Total Miles and Land Acreage (Impoundments not included)	553	176,960

In addition to the existing scenic roads and roadless areas, this study has also identified additional routes and areas worthy of study. The location of the potential is shown on figure 10.

Development of the Resource

This subregion as a whole is endowed with an abundance of land and water areas having high recreational potentials. These potentials, if properly developed, could help to alleviate the growing needs resulting from the large amounts of weekend and vacation-type recreation use originating from the other subregions as well as those of the subregion residents. Federal and State areas will have to be developed with additional facilities to provide for most of the regional and statewide needs which involve the subregion. Mainly because of locational imbalances, certain areas, particularly those related to water bodies, will have to be acquired at the Federal and State levels, not only to provide for new development sites but also for public access and environmental and management purposes. With regard to the recreational needs of the subregion residents, much of it is for high intensity day use recreation which will require the acquisition and development of areas in or near population centers at the county and city levels. The private sector will undoubtedly provide for some of the future needs both for the resident population and for those from outside the subregion.

Table 31 lists the estimated land and water requirements for Subregion 2.

Table 31 - Land and Water Requirements for Water Related Demand Subregion 2

Activity	1970	1980	2000	2020
		(acres)		
Camping and Picnicking				
Land	2,100	2,800	5,200	9,400
Water	4,200	5,600	10,400	18,800
Swimming				
Land	30	40	80	140
Water	90	120	240	420
Boating and Water Skiing				
Land	250	290	530	970
Water	12,800	14,100	25,200	46,300
Shoreside Hiking				
Land	400	500	750	1,400
Water (not determined)	-	-	-	-
Total Land (Rounded)	2,800	3,600	6,600	12,000
Total Water (Rounded)	17,100	19,800	35,800	65,500

Table 32 contains an estimate of the acquisition and development needs by level of administration based on land requirements.

Table 32 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 2

	(1)	(2)	(3)			(4)			(5)		
	Land ^{1/} Inventory BOR I & II	Existing ^{2/} Facility Development	Water Related ^{3/} Development Needs			Land Acquisition Needs			Facility Development Needs		
	(1,000 Acres)		1980	2000	2020	1980	2000	2020	1980	2000	2020
Federal	10.8	1.0	0.8	1.5	2.6	-	-	-	-	0.5	1.6
State	132.3	0.3	1.4	2.6	4.8	-	-	-	1.1	2.3	4.5
County and Municipal	1.2	0.5	0.3	0.5	0.9	-	-	-	-	-	0.4
Private	0.1	0.1	1.1	2.0	3.7	-	-	-	1.0	1.9	3.6
Total	144.4	1.9	3.6	6.6	12.0	-	-	-	2.1	4.7	10.1

1/ Data from table 26 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water).

2/ Data from table 27 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water).

3/ Data from figure 9.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water related recreation needs as viewed from specific activities:

Swimming

For the subregion as a whole, there is more than adequate water-surface area to support all the demand which was estimated for swimming. However, there is a need to develop additional beaches and facilities associated with swimming and to provide public access at certain water areas within the subregion. Much of this need could be met by appropriate development for swimming at the major water areas associated with the Columbia Basin Project and the several impoundments on the Columbia River which are situated within the subregion. Local swimming needs at population centers not located at or near water bodies conducive to swimming can best be met by the development of additional swimming pools. It has been estimated that a total of about 30 acres of land for swimming will be required in 1970, 40 acres by 1980, 80 acres by 2000, and 140 acres by 2020 for the subregion as a whole.

Boating

Boating involves both running water for rubber rafts, kayaks, and other types of water craft as well as natural and manmade lakes for sailing and other boating use, including those for water skiing. Although many water bodies in the subregion can be used for boating but not for water skiing, similar facilities are required. The demand estimates show that there are ample waters available for boating and water skiing within the subregion. There is, however, a definite shortage of developed facilities on existing waters, and the quality of much of the existing development is less than it should be. Table 33 shows the estimated number of pleasure boats and projections which could be expected in future years within the subregion.

Table 33 - Pleasure Boats and Projections, Subregion 21/

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	11,992	13,190	23,493	43,227
Car Top	1,199	1,320	2,349	4,322
Moored	3,255	3,580	6,379	11,737
Stored	685	754	1,342	2,469
Total	17,131	18,844	33,563	61,755

1/ Based on preliminary data from Survey of Boating Needs, State of Washington, Walla Walla District, Corps of Engineers.

On the basis of the above information, the estimated number of lanes of boat-launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
120	132	235	432

Additional water-access sites will be required to accommodate the boating facility needs. A total of 250 acres will be required by 1970, 290 acres by 1980, 530 by year 2000, and 970 acres by year 2020 for the subregion as a whole.

Camping and Picnicking

Picnicking is and will be a popular outdoor activity frequently associated with other activities within the subregion. Because of the high nonresident use, camping is also a very popular activity in the area. There is and will be a need for additional picnicking and camping development in the subregion. Sites located

in or near population centers, at major water areas, or along main highway routes should receive primary consideration of these facilities. In addition to the quantity lack when demand and supply are compared, a number of picnicking and camping areas in the subregion provide only the bare minimum in facilities and often of low quality. The total land requirements to accommodate these activities adjacent to water, either streams or lakes and reservoirs, are estimated to be 2,100 acres in 1970, 2,800 acres by 1980, 5,200 acres by 2000, and 9,400 acres by 2020 for the subregion as a whole.

Hiking

A large part of the subregion has superior hiking as well as back-packing and horseback riding opportunities. Outside of certain selected areas within the subregion, however, more could be done to enhance these opportunities. More markers and various interpretation facilities could be utilized, together with the development of additional trails.

Driving for Pleasure and Sightseeing

Sightseeing is the most popular recreation activity. The subregion offers both natural and manmade features of great interest. Most notable are such features as Grand Coulee Dam, Dry Falls, and the North Cascades. The subregion has a good system of highways and other roads which provide access to its major sightseeing areas. However, there is a need to provide better access to many of the lesser known and developed attractions and destination points within the subregion. Also, sightseeing opportunities in the subregion would be greatly enhanced by the development of self-guided tours involving a system of signs and interpretative facilities. One such tour program would be appropriate for the huge Columbia Basin Project. The self-guided tour could be developed to highlight the engineering aspects of the project, serve to connect the major development areas, and give meaning to sightseeing expeditions, thus increasing the potential recreational use of these resources.

Winter Sports

Among the other activities, winter sports use has had the most rapid growth in importance and popularity within the subregion. Generally, development of skiing areas has, at best, barely kept pace with demand because of the heavy weekend use by nonresidents. There is a shortage of facilities and easy opportunities for other winter sports.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation-administering agencies. Based on the percentage of water related demand to total recreation demand, there will be a need to accommodate the following:

Table 34 - Water Related Recreation Demand to be Satisfied, Subregion 2

Item	1970	1980	2020	2020
		(1,000 Recreation Days)		
Total	700	1,610	6,291	14,742
Incremental	700	910	4,681	8,451

Table 35 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with suggested studies.

Table 35 - Development and Study Costs of Recreation Programs, Subregion 2

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	3,735	27,805	48,970	80,510
Annual OM&R	225	1,675	2,950	4,850
Study Costs				
Free Flowing Rivers	500	-	-	500
Roadless Areas	168	-	-	168
Scenic Roads	28	-	-	28
Total	4,656	29,480	51,920	86,056



3 20-000000

SUBREGION 3

YAKIMA

PRESENT STATUS

The Recreation Setting

The Yakima Subregion is composed entirely of the Yakima River watershed in Washington. The subregion with an area of about 6,000 square miles is bounded by the Horse Heaven Hills and the Klickitat Watershed Divide on the south, the Cascade Crest on the west, the Wenatchee Mountains in the north, and the Yakima-Columbia River Divide on the east.

The climate is relatively mild and dry. Average annual precipitation varies from 100 inches in the western mountain summits to less than 10 inches on the eastern lowlands. Summers are hot and dry, winters cool with heavy snowfall in the mountainous areas and light snowfall in the lowland.

Because of the wide variations in altitude, temperatures, and precipitation, natural vegetation is diverse. The eastern section, being relatively dry, has a desert-type cover consisting of sage, short bunchgrass, and treeless landscapes. The stream courses support small deciduous woodlands. Progressing westward up the eastern slopes of the Cascade Mountains, conditions change rapidly from thin to dense coniferous forests of pine, larch, and fir. Extensive alpine meadows, grasslands, and fields of low brush types grow near the summit of the range. Critical analysis of the existing landscape patterns and ecological associations with a view toward preservation and environmental enhancement should precede planning of projects that would result in changing the face of the land.

Settlement of this subregion was rather late. Although a Catholic mission, St. Josephs, was established in the early 1850's and travelers and trappers passed through the area, the Indian troubles discouraged settlement. Fort Simcoe, now a State Historical Site, was established in 1856 when a treaty was accepted by the Yakima Indians, and they were led onto the reservation bearing that name. Another known point of interest is the Yakima Indian Painted Rocks State Historical Site. Modern time events center around the development of irrigation and the establishment

of the Hanford Atomic Energy Project in Benton County. Identification of additional points of historical interest may result during the ongoing survey being conducted by the State relative to the preparation of a comprehensive plan for historic preservation under the National Historic Preservation Act.

The aboriginal inhabitants of Subregion 3 included principally the Sahaptin speaking Yakima, Umatilla, Walla Walla, and Palus. The eastern part of the area is within the territory of the Nez Perce. Archeological research has established that the area has been occupied for at least 10,000 years. The concentration of prehistoric populations along the major waterways resulted in a vast number of archeological sites. Unfortunately, the potential for archeological and related research in the region is being greatly diminished by dam construction. Even so, research and survey in the Blue Mountains and along the courses of smaller rivers such as the Palus and Tucannon are needed to establish the research potential for the area outside the courses of the Snake and Columbia.

The many species of game fish and animals found in the subregion offer the recreationist excellent opportunities for hunting, fishing, and photography. Details on these resources appear in the Fish and Wildlife Appendix.

Two sections of the Washington State Scenic and Recreational Highway System, established in 1967, are in this subregion. They are the Yakima Canyon area of U.S. 97 from south of Ellensburg to just north of Selah in Yakima County and a portion of Interstate 90 from near Cle Elum west to the Kittitas County line. Good primary and secondary roads serve the area.

The Northern Pacific Railroad provides passenger service to the subregion through Ellensburg and Yakima. Other railroads have freight service on spur lines within the region. Airline services on regular schedules are provided to Yakima and the Richland-Kennewick area by Air West.

The 1960 population of this subregion was 227,649 while the 1965 population was 236,700 an increase of 9,051. The 1965 population was 4.0 percent of the total for the Columbia-North Pacific Region. In 1965, 148,175 persons resided within urban communities while 109,925 were residents of unincorporated areas. The three principal cities of the subregion, Yakima, Richland, and Kennewick, account for 93,400 persons or 36 percent of the total subregional population. The greatest recreation demand is generated in these urban areas.

Available Outdoor Recreation Resources

Major Recreation Areas

There are 56 specified state recreation areas in this subregion, ranging in size from less than one acre (historical site) to the 89,879-acre Collockum Game Range in Kittitas County.

There are several hundred miles of hiking trails in this subregion, including over 100 miles of the Pacific Crest Trail, one of our Nation's designated National Scenic Trails.

Some of the major recreation attractions are:

Fort Simcoe - Established in 1856, this is the only fort from the Indian period with buildings still standing.

Goat Rocks Wilderness - Nearly 25,000 acres of this 82,680-acre wilderness are located within this subregion. This area lies above 3,000-foot elevation and derives its name from the bands of mountain goats which inhabit its rocky crags.

Ellensburg Rodeo - One of the top-rated rodeos in the Nation, it is held annually over the Labor Day weekend and attracts thousands to this subregion. Other smaller rodeos and fairs are held throughout the subregion during the rest of the year.

Yakima River Canyon - Approximately 25 miles of this canyon have been designated as part of the scenic and recreational highway system of Washington State. The first development projects in this system will be made in this canyon and will include campgrounds, boating ramps, picnic areas, and interpretive centers, in addition to preserving the existing magnificent scenery and existing recreational opportunities.

Reservoirs - This subregion contains several scenic reservoirs that are used for recreation. Most notable of these are Kachess, Cle Elum, Keechelus, Tieton, and Bumping Lakes. These lakes contain a total of about 16,000 surface acres.

Table 36 summarizes the major recreation resources for the subregion.

Table 36 - Major Recreation Resources in All Ownerships, Subregion 3

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	6	16.0	
Lakes and Other Slack Water	4	1.2	
Other Water			
Small		12.9	
Large		11.3	
Total Water Surface		41.4	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	-		-
Established Roadless Areas	1	22.9	
Established Scenic Roads			60

Source: Tables 1, 7, and 8.

Existing Supply

The 56 State recreation areas contain 190,214 acres, of which 8,207 acres are State parks, 181,499 acres are Department of Game fishing and hunting areas, and 508 acres are Department of Natural Resources camping and picnicking areas.

Since the above inventory was taken, the State Department of Game has purchased the 100,000-acre High Valley Ranch which was dedicated in July 1969 as the L. T. Murray Wildlife-Recreation Area. This site contains over 15 miles of frontage on the Yakima River. It is not included in any of the statistics used in this report, as its purchase occurred after basic data had been prepared.

The Federal Government owns and controls 945,532 acres of the subregion's available recreation lands. Including the Federal areas, approximately 1,745,227 acres of the subregion's 3,851,400 acres are presently available for some form of recreational use.

Table 37 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

In addition to the above, the Atomic Energy Commission, the Department of Defense, and the Bureau of Indian Affairs own or supervise approximately 2 million acres of land in this subregion. None of it is open for recreational use on a year-round basis, although some portions are available for certain seasons and special uses, primarily hunting and fishing.



Scenic reservoirs such as Lake Cle Elum provide much of the water-oriented recreation in the subregion. (Forest Service Photo)

Table 37 - Acreage of Inventoried Lands by BOR Classes, Subregion 3, 1964^{1/}

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	-	0.10	-	0.17	-	0.27
II	72.18	168.77	.62	0.27	-	241.84
III	772.41	8.99	-	0.01	-	781.41
IV	1.76	0.16	-	-	-	1.92
V	22.94	-	-	-	-	22.94
VI	-	0.24	-	-	-	0.24
Total Classed	869.29	178.26	0.62	0.45	-	1,048.62
Not Classed	<u>351.11</u>	<u>128.44</u>	<u>3.18</u>	<u>10.55</u>	<u>2,309.50</u>	<u>2,802.78</u>
Grand Total ^{3/}	1,220.40	306.70	3.80	11.00	2,309.50	3,851.40

^{1/} BOR classes are described in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Land and Mineral Resources.

There are nearly 1.45 million acres of private lands which include agricultural and urban areas; but, in addition, there are large tracts of timberland which contain lakes and scenic attractions. Many local ranches supplement their income by providing ranch vacations, pack trips, hunting season guide service, and hunting areas, particularly for waterfowl.

The private sector has invested heavily in motels, hotels, and lodges. They also sponsor large spectator events, such as rodeos, fairs, and exhibits.

Winter vacation homes are becoming popular near the major ski areas. Demand for summer homes and other vacation properties along streams and near lakes has had a strong influence on real estate activities during recent years.

Most of the major ski resorts of the State are located in the Cascade Range either on the fringe or just outside the subregion. Major private investment has been made in such areas as Hyak and Ski Acres on Interstate 90 and further south in White Pass on U.S. 12. While these areas attract significant numbers of people from this subregion, most of the attendance comes from Subregion 11, the Puget Sound area.



Most of the attendance at the three major ski areas in the subregion comes from the Puget Sound area. (Bureau of Outdoor Recreation Photo)

Table 38 - Facility Development, Subregion 3

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	229	1,057	24	1	1,311	-	1,311
	Units	425	306	200	5	936	-	936
Trailer	Acres	31	1,001	1	1	1,034	-	1,034
	Units	62	26	22	6	116	156	272
Group	Acres	69	1,004	40	1	1,114	-	1,114
Picnicking	Acres	94	1,088	183	71	1,436	-	1,436
	Units	278	467	391	587	1,723	-	1,723
Marinas	Number	3	-	8	1	12	NA	12
	Slips	1	-	20	8	29	NA	29
Winter Sports	Number	3	-	-	-	-	-	3
	Lifts or Tows	36	-	-	-	-	-	36
Swimming Beaches (Organized)	Acres	-	3	4	-	7	NA	7
Parks and Playgrounds	Number	2	2	1	16	21	-	21
	Acres	8	65	10	41	124	-	124

Dash (-) Not Reported
NA - Not Available

Nonprofit private organizations such as the Nature Conservancy, and youth, church, and civic organizations contribute significantly to the recreation supply. Many carry out conservation programs; and organizations such as YMCA, Boy Scouts, Camp Fire Girls, and church groups operate resident and day camps.

The Bureau of Outdoor Recreation Inventory completed in 1965 indicates that most of the developed facilities for camping in this subregion are on Federal lands, while facilities for picnicking are in municipal parks. Table 38 shows the facility development as of 1965.

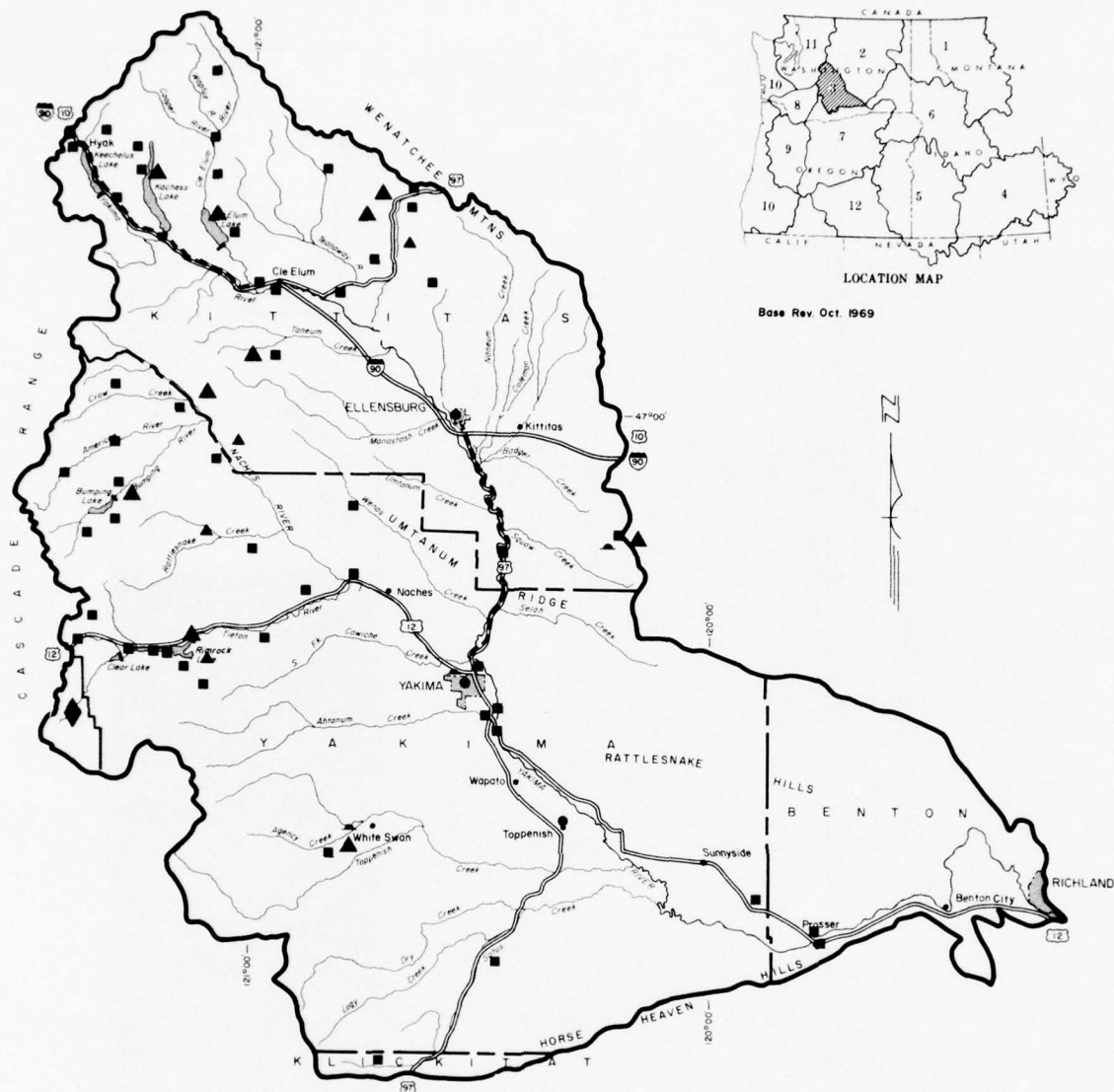
The general locations of existing recreation resources are shown on the map, figure 11.

Use of Recreation Resources

Table 39 lists the reported and calculated visitation to recreation sites in the Yakima Subregion during 1965. About one-fourth of the total visits were to private enterprises as estimated from the Chilton Report on Private Outdoor Recreation Enterprises. The data on visitation to public facilities were supplied by the agencies as listed. The 1965 attendance to Subregion 3 represents about 2.8 percent of the entire regional attendance.

In 1967, the State of Washington conducted a statewide outdoor recreation demand study for use in its Statewide Outdoor Recreation and Open Space Plan. The study indicated that participation in activities at water oriented areas was well below the state average, but use of urban parks was considerably higher than the state average. Table 40 substantiates these later findings, in that picnicking is shown in the table as being nearly twice as great as other activities. However, much of this participation may be due to the lack of developed facilities for activities other than picnicking rather than being the choice of participating residents.

The State study further determined that the most popular activities for this subregion, in the order of preference by residents of all ages including children, were bicycling for pleasure, driving for pleasure, outdoor swimming in pools, walking for pleasure, playing outdoor games, and visiting local parks.



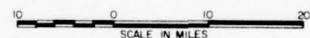
LOCATION MAP

Base Rev. Oct. 1969



LEGEND

CLASS I		●
CLASS II		■
CLASS III	1-500 Acres	▲
	500+ Acres	▲
CLASS IV	1-200 Acres	★
	200+ Acres	★
CLASS V		◆
CLASS VI		▲
NATIONAL RIVERS	Designated	—————
	To Be Studied	—————
SCENIC ROUTES	Identified	- - - - -
NATIONAL PARK, WILDERNESS, & PRIMITIVE AREA BOUNDARIES		—————

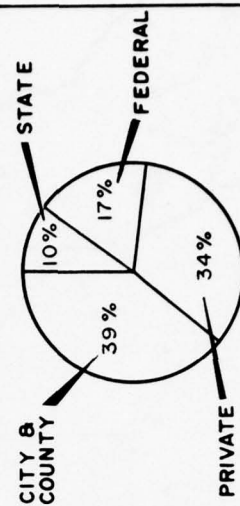


COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
RECREATION AREAS**
YAKIMA SUBREGION 3

FIGURE 11

Table 39 - Recreation Use, Subregion 3, 1965

Land Administering Agency	Water										Total
	Swimming	Boating	Skiing	Fishing	Camping	Picnick- ing	Sight- seeing	Winter Sports	Hunting	Other	
	(1,000 Recreation Days)										
Forest Service		5	5	90	280	90	60	205	130	45	910
Bureau of Land Management				1		1	5		1		8
Bureau of Reclamation	6	3	3		15	6	58				91
National Park Service											
Corps of Engineers											
Bureau of Sport											
Fisheries & Wildlife	2			11			8		5	4	30
Other Federal	13	6	5	77	43	126	248	1	49	47	615
State Agencies	270	81	18	137	46	797	212			843	2,404
County & Municipal											
Private	95	32	11	437	131	347	200		434	391	2,078
Total	386	127	42	753	515	1,367	791	206	619	1,330	6,136



Value of Outdoor Recreation and Tourism

Outdoor recreation and tourism is an important industry in this subregion. From a review of the Bonneville Power Administration study of this industry, it was determined that recreation expenditures within the Yakima Subregion included \$25 million by tourists and \$13 million by nontourists. The total of \$38 million represents 4,000 employees that add considerably to the economy but utilize only a small part of the outdoor recreation and tourism potential.

Out-of-state visitor use of outdoor recreation facilities in this subregion is well below the average for other subregions within the State of Washington, according to the Washington State-wide Comprehensive Outdoor Recreation and Open Space Plan. However, the impact of visitors from other parts of the State, especially from Subregion 11, is very high. Washington State Game Department records indicate that this subregion is the most popular in the state for hunting. With development of the recreation potential of the recently purchased L. T. Murry Wildlife-Recreation Area and the Yakima Canyon Scenic and Recreational Highway, this subregion could have one of the most rapid increases in outdoor recreation participation of any subregion within the study area.

FUTURE DEMAND

The population of the subregion is expected to increase from a 1965 level of 236,700 to approximately 443,700 persons in 2020. While the annual population growth rate to the year 2020 is expected to be less than for the region as a whole (averaging slightly less than 1.3 percent annually as opposed to 1.6 percent for the region), the subregion nonetheless provides important recreational services to the more populous subregions.

A major portion of the subregion population is located in the cities of Yakima and Richland (1960 populations of 43,284 and 23,548, respectively), with a concentration of population along the Yakima River canyon between the two cities. In addition, minor population subcenters are located at Ellensburg and Cle Elum. It is projected that future growth will occur primarily in these existing centers, following the trend toward increased urbanization evidenced in the entire region and in the Nation as a whole. The expected growth of recreation demand is shown in figure 12.

The present population represents approximately 4 percent of the population of the entire region, although the proportion is expected to decrease to 3.5 percent by 2020. In comparison, the current demand for outdoor recreation is only 2.7 percent of that for the total region. This disparity indicates, to a limited extent, that much of the demand generated within the subregion is

probably being satisfied in other subregions. This demand is, of course, for selected recreational activities and not for all activities.

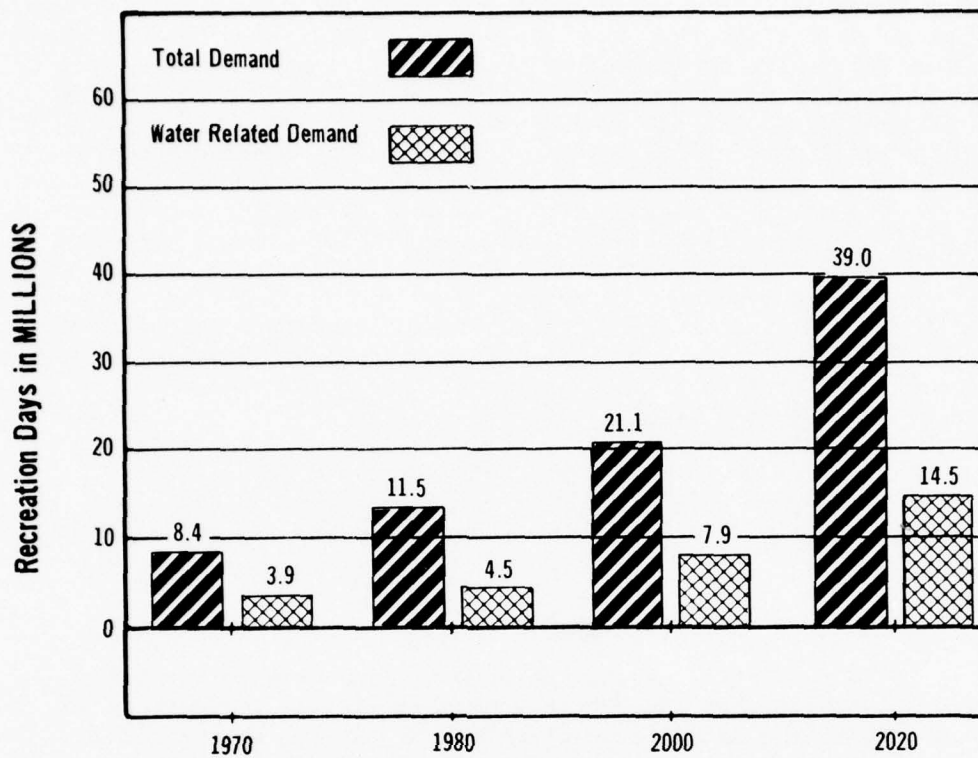


FIGURE 12 **Expected Growth of Recreation Demand** **Subregion 3**

Water related activities include both those requiring actual water surface, such as swimming, fishing, boating, and water skiing in addition to those activities that occur on land but are enhanced when located near the water. Demand for water related activities is shown in table 40.

Table 40 - Projected Demand, Water Related Recreation, Subregion 3

Activity	1970	1980 (1,000 Occasions)	2000	2020
Boating	1,400	1,500	2,600	4,700
Water Skiing	171	199	361	685
Swimming	1,267	1,471	2,671	5,065
Fishing	850	1,047	1,386	1,807
Sightseeing	2,153	2,500	4,541	8,610
Picnicking	1,706	1,982	3,600	6,823
Camping	1,118	1,298	2,357	4,469
Other ^{1/}	1,035	1,203	2,184	4,141
Total	9,700	11,200	19,700	36,300
Recreation Days ^{2/}	3,900	4,500	7,900	14,500

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day rounded.

OUTDOOR RECREATION NEEDS

The current (1970) estimated use of outdoor recreation facilities within the subregion is approximately 6,565,520 recreation days, representing 31 percent of the total 1970 recreation demand for the subregion of 21,100,000 activity days. While the total capacity of the inventoried recreational land and water is far in excess of even the most distant future demand projection, it is apparent from figure 13 that the increase in facility needs will become more acute in the future.

When dealing with recreational demand and supply at the regional level, the spatial distribution of resources and demands within the region cannot be taken into consideration. For example, although no overall regional need for a particular facility might be evident, there may be a significant need for that facility at some specific location within the region. In general, there is a greater tendency for spatial imbalance to develop within a region for those activities with a small service area than for those whose service area is closer in size to that of the entire region.

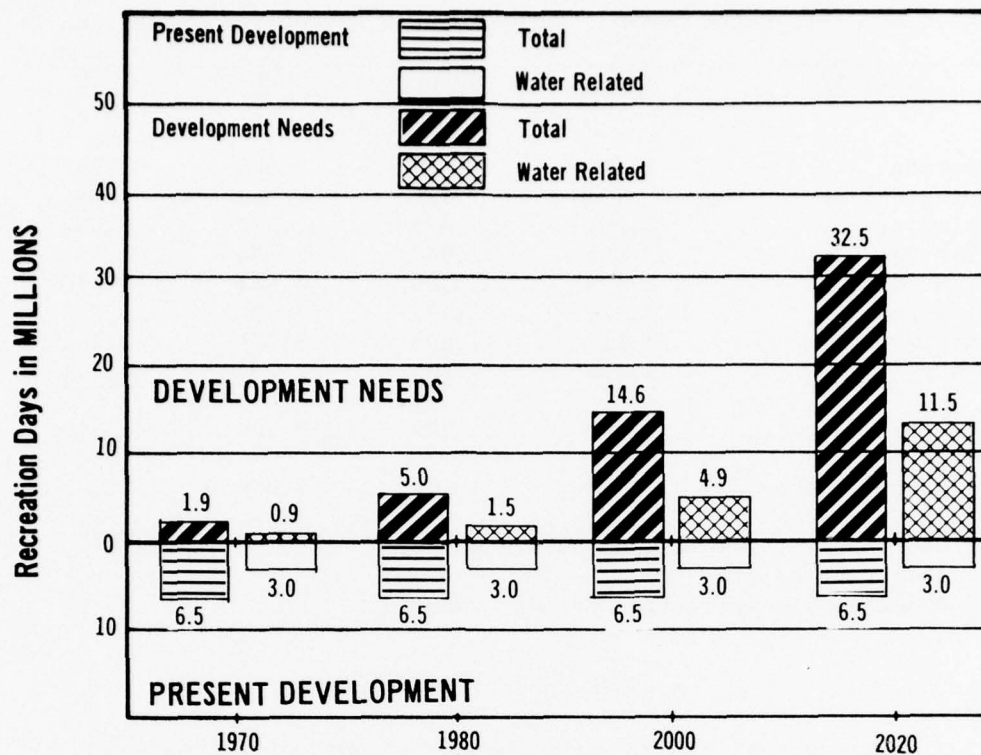


FIGURE 13 Need for Recreation Facility Development Subregion 3

MEANS TO SATISFY NEEDS

Protection of Resources

To assure an adequate supply of land and water for future use, steps should be taken now to protect and, in some cases, enhance the quality of the resources of the subregion. The fragile ecological character of the alpine areas needs to be studied to determine the proper carrying capacity of recreationists to prevent future damage from overuse.

The Washington Statewide Comprehensive Outdoor Recreation and Open Space Plan dated July 1969 has determined acquisition and development needs and the cost of satisfying those needs for the combined counties of Yakima and Kittitas. An estimated \$85.6 million of the identified \$93.2 million of acquisition costs for 1967 are required to purchase small urban parks and key ecological areas. The latter are defined as lands needed to

maintain an ecological balance, including management of plantlife, wildlife, and other species, and general environmental enhancement.

There is also a need to preserve the historic values of early structures and past events which contributed to the development of the area.

An important step has been taken toward environmental preservation and enhancement in the Yakima Canyon project, presently being developed jointly by the Department of Highways and the State Parks and Recreation Commission. (26) It is anticipated that the development of planning and design standards for scenic highways will emerge from this project and will serve as a basis for future projects of this nature.

Efforts should be made at all levels of government to maintain the existing quality of the Yakima River and its tributaries and, to the extent possible, to enhance the quality of the river's waters. Since the Yakima River is well diked for much of its length near intensively developed areas and is otherwise generally confined to its basalt channel, it rarely floods beyond its normal channel. The restriction of intensive development along the river is therefore not as great a problem as in other subregions, although efforts to restrict development in and near the urban and urbanizing areas should continue.

Regional planning agencies cross local jurisdictional boundaries; thus they deal with environmental considerations which do not respect the boundaries of political subdivisions. The formation of such a regional planning body within the subregion could be extremely instrumental in protecting and enhancing the quality of resources and providing for their optimum use in the subregion, both presently and in the future.

Streams provide much of the recreation attraction of this subregion. A balance must be maintained between free-flowing streams and slack water opportunities in order to provide for a wide range of opportunities to satisfy the many diverse activities. The Yakima River, because of its size, location, and scenic canyon, is highly important in the overall recreation plan for the area. In-depth planning must precede any proposal to alter the character of the river.

Table 41 contains a list of streams which have been identified as having significant recreation potential. This potential should be given proper consideration in all plans for the use of these streams. It should be emphasized that this list is preliminary only and is subject to future revision in light of additional inputs from Federal, State, and local agencies.

Table 41 - Principal Recreation Streams, Subregion 3

Description	Miles	Acres at 320/mile
Yakima River - from its source to its confluence with the Columbia River.	210	67,200
Naches River - from origin to confluence with Yakima River.	45	14,400
American River - from origin to confluence with Bumping River.	25	8,000
Bumping River - from origin to confluence with Naches River.	25	8,000
Tieton River - from Tieton Reservoir to confluence with Naches River.	21	6,720
North Fork Tieton River - from origin to Rimrock Lake.	15	4,800
South Fork Tieton River - from origin to Rimrock Lake.	21	6,720
Teaaway River - from origin to confluence with the Yakima River.	12	3,840
North Fork Teaaway - from origin to junction with Teaaway River.	19	6,080
Middle Fork Teaaway River - to junction with West Fork Teaaway River.	15	4,800
West Fork Teaaway River - to junction with Middle Fork Teaaway River.	15	4,800
Cle Elum River - from origin to confluence with Yakima River.	26	8,320
Subregion Total Miles and Land Acreage (Impoundments not included).	449	143,680

Figure 14 shows the location of potential recreation development areas and features.

Development of the Resource

In addition to resource protection, there is also a need for development of facilities to handle the increasing use. Development costs to satisfy the needs will be approximately \$90 million. A large portion of identified development needs for the two-county region is for facility development on freshwater shorelands and for camping facilities in forest areas. A significant amount of the acquisition and development needs calculated in the Statewide Plan is generated by residents of the Puget Sound area for recreation lands for winter sports activities and for hunting on range areas.



Base Rev. Oct. 1969

LEGEND

- DEVELOPMENT ZONES
- ROADLESS AREAS
- RECREATION RIVERS
- SCENIC ROADS



NOTE:
Zone boundaries are diagrammatic



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**POTENTIAL
RECREATION AREAS**
YAKIMA SUBREGION 3

FIGURE 14

Table 42 lists the estimated land and water requirements by activity for Subregion 3.

Table 42 - Land and Water Requirements for Water Related Demand, Subregion 3

Activity	1970	1980	2000	2020
	(acres)			
Camping and Picnicking				
Land	1,150	1,550	2,800	5,300
Water	2,300	3,100	5,600	10,600
Swimming				
Land	20	25	40	80
Water	60	75	120	240
Boating and Water Skiing				
Land	275	310	530	990
Water	12,200	13,300	22,900	42,200
Shoreside Hiking				
Land	270	300	400	800
Water (not determined)	-	-	-	-
Total Land (Rounded)	1,700	2,200	3,800	7,200
Total Water (Rounded)	14,600	16,500	28,600	53,000

Table 43 contains an estimate of the acquisition and development needs by levels of administration.

Table 43 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 3

	(1)	(2)	(3)			(4)			(5)		
	Land ^{1/} Inventory BOR I & II	Existing ^{2/} Facility Development	Water Related ^{3/} Development Needs			Land Acquisition Needs			Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	65.0	0.4	0.6	1.0	2.0	-	-	-	0.2	0.6	1.6
State	111.5	2.8	0.2	0.4	0.7	-	-	-	-	-	-
County and Municipal	0.1	0.1	0.9	1.5	2.8	0.8	1.4	2.7	0.8	1.4	2.7
Private	0.1	0.1	0.5	0.9	1.7	-	-	-	0.4	0.8	1.6
Total	176.7	3.4	2.2	3.8	7.2	0.8	1.4	2.7	1.4	2.8	5.9

^{1/} Data from table 37 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{2/} Data from table 38 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{3/} Data from figure 13.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The preceding portion of the study of outdoor recreation needs in the Yakima Subregion has focused on the adequacy of the land and water resource base to satisfy demand. This section will concentrate on needs from the perspective of individual recreational activities.

Swimming

While some of the demand for swimming in the subregion is satisfied in undeveloped lakes, the use of swimming pools is becoming increasingly important, especially in the urban and urbanizing areas. It is estimated that pools in the city of Yakima alone provide approximately 200,000 user-days of swimming activity for its citizens.

Pools alone cannot eliminate swimming needs in the subregion, however. Nonpool swimming demand in activity occasions is estimated at 1,427,000 in 1970, 2,040,000 in 1980, 3,926,000 in 2000, and 7,472,000 activity occasions in the year 2020. Approximately 20 acres of land and 60 acres of water are required to meet these needs in 1970, increasing to 80 acres of land and 240 acres of water in 2020.

The Yakima River itself offers some swimming opportunities but pollution and rapid currents limit this activity.

Boating

The number of boats of all types in the subregion is expected to increase at a rate of nearly 5 percent annually to the year 2020. Quantitative projections by selected years and by transport mode are shown in table 44.

Table 44 - Pleasure Boats and Projections, Subregion 31/

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailerred	11,408	12,435	21,388	39,354
Car Top	1,141	1,244	2,140	3,937
Moored	3,097	3,376	5,807	10,685
Stored	652	711	1,223	2,250
Total	16,298	17,766	30,558	56,226

1/ Based on preliminary data from Survey of Boating Needs, State of Washington, and Walla Walla District, Corps of Engineers, 1969.

In a study of the recreational aspects of a proposed multi-purpose reservoir on Satus Creek, located about 29 miles south of the city of Yakima on the Yakima Indian Reservation, the Bureau of Outdoor Recreation has projected recreation participation rates of selected activities within the reservoir market area. (25) The market area is defined therein as the area from which approximately 80 percent or more of the persons recreating at the project would originate. This market area, as defined, corresponds roughly to the southerly portion of the subregion. The Bureau has estimated that boating participation growth rates, irrespective of the population growth rate, will approach 1.2 percent annually in the first quarter of the twenty-first century.

On the basis of the above information, the estimated number of lanes of boat launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
114	124	213	393

Camping and Picnicking

As is the case with nearly all other recreational activities in the subregion, the need for camping and picnicking facilities, both present and future, exhibits a rate of growth significantly greater than that of the population. The total demand for water associated picnicking and camping is expected to increase from a 1970 level of 1,343,000 activity occasions to 1,920,000 occasions in 1980, 3,695,000 occasions in 2000, and 7,032,000 activity occasions in the year 2020. This increased activity level represents an annual rate of growth of 4.3 percent between 1970 and 1980, with an annual growth rate of more than 4.5 percent projected for the years 2000 to 2020. The rate of population growth, in comparison, is expected to average 1.3 percent annually to the year 2020.

There is ample developable land already in Federal ownership to accommodate the need for vacation and weekend use.

Hiking

A portion of the Pacific Crest Trail coincides with most of the westerly boundary of the Yakima Subregion. Included among the spectacular scenery characteristic of the trail is the Goat Rocks Wilderness partly in the Yakima Subregion.

Driving for Pleasure and Sightseeing

Although quantified measures are difficult to obtain, it is probable that automobile riding for sightseeing and relaxation in the subregion ranks high in terms of frequency of participation as it did nationally as determined by the Outdoor Recreation Resource\$ Review Commission in 1962. The 91 miles of designated scenic and recreational highways in the subregion will provide needed facilities for scenic observation through the preservation of natural beauty and the esthetic enhancement of the delineated highway corridors.

In addition, there is increasing evidence of the need for improved access to historic and geologic interpretive sites together with complementary supporting facilities for picnicking and camping.

Winter Sports

With most of the State's major ski areas located within or in proximity to the subregion, needs originating within the subregion must be met, but more significantly, needs generated by adjacent subregions must also be considered. While most of the recreational demand that must be satisfied is associated with skiing and supporting facilities, a rapidly growing demand for trails and operating areas for over-snow vehicles is becoming apparent. Careful planning is mandatory to provide for a diversity of winter sports activities while minimizing conflicts between generally incompatible winter sports activities.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, and land necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies.

The capital investment cost for land and facilities for water related recreation is shown in table 45 based on an average of \$4.15 per recreation day.

Table 45 - Development and Study Costs of Recreation Programs,
Subregion 3

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	6,225	14,110	27,390	47,725
Annual OM&R	375	850	1,650	2,875
Study Costs				
Free Flowing Rivers	413	-	-	413
Roadless Areas	74	-	-	74
Scenic Roads	6	-	-	6
Total	7,093	14,960	29,040	51,093



LOCATION MAP

4 20-000000

SUBREGION 4

UPPER SNAKE

PRESENT STATUS

The Recreation Setting

The Upper Snake Subregion is composed of the lands drained entirely by the headwaters of the Snake River. The subregion embraces parts of three general physiographic provinces - Columbia Plateau, Middle Rocky Mountain, Basin and Range province. Lava flows and dry lake beds of the Miocene and Pliocene periods, eroded buttes, bluffs, and high cliffs of columnar basalt, remnants of old volcanoes, and snow-capped peaks characterize the area. The Snake River, from its origin in Yellowstone National Park, flows through the subregion moving southerly through Jackson Hole and then westerly in a great arc across the center of the subregion. Major tributaries to the Snake River in the subregion include the Hoback, Greys, Salt, Blackfoot, Portneuf, Raft, and Wood Rivers.

The archeological resources of the Upper Snake River Subregion fall within the historic territory of the Northern Shoshoni who may have been in the area for several thousand years, and the Bannock who appear to be late prehistoric arrivals. Relatively dense native populations lived in the Fort Hall Bottoms at the confluence of the Portneuf with the Snake River and in the Magic Valley area near Twin Falls. The entire region shows evidence of prehistoric settlement, but there appears to be important variations in type, size, and time of these occupations. Such variations reflect adaptations to changing physical environments in the past 12,000 years or more.

In this region early man sites have been found, including Clovis and Folsom localities and the 14,500-year-old settlement at Wilson Butte Cave. Numerous fossil vertebrates offer the prospect of an association between prehistoric man and extinct mammals. To date, only limited excavations have been carried out, including the Simon Clovis site in Camas County, Wilson Butte Cave and the Mecham burial cave in Jerome County, the Sampson site in Bannock County, the Willow Creek Rockshelters and Owl Cave in Bonneville County, and the Malad Hill site in Oneida County. Archeological survey of the Lower Teton, Lynn Crandall (formerly Burns Creek),

and American Falls reservoirs and Railroad Ranch property have been conducted. Most of the Henrys Fork of the Snake and the tributary valleys of the upper Snake River remain to be surveyed.

The climate in the subregion varies greatly. There is a large daily range in temperature, the range being greatest in summer and least in winter. Summers are especially pleasant due to dryness and cool nights. The dryness also helps to make the extreme cold spells in winter more bearable, as does the fact that these cold periods are frequently accompanied by clear skies and are seldom associated with strong winds. The heaviest precipitation falls as winter snow in the upper elevations and as rain in the lower elevations. Snowfall varies with some winters having no snow in the lower elevations and up to 14 feet in the higher mountain areas.

The subregion is rich in scenic, geologic, and biologic resources which afford a great diversity of both active and passive forms of recreation.

The fauna was the lure to the trappers of a century and a half ago. The abundant fish and wildlife attract many fishermen and hunters today. Moose, elk, deer, bear, antelope, mountain goat, upland game birds, and waterfowl all contribute to the sport of hunting. Vegetation varies from semidesert species in the lowlands to lush forests and wet meadows in the mountains of the east and north.

In general, agriculture is the leading industry, but recreation and tourism are expanding rapidly; and in the Jackson Hole and Island Park areas, recreation is the dominant industry. Manufacturing, the second most important industry, is strongly related to agriculture and recreation.

In 1965 the population of the subregion was 302,000 (17), up 25 percent from 1950. A large majority of these people live in or near the major metropolitan areas of Idaho Falls, Pocatello, and Twin Falls, Idaho.

A far-reaching road building program designed to meet present and future demand is underway. Three airlines, two bus lines, and one major railroad complete the transportation system in the subregion.

Available Outdoor Recreation Resources

Major Recreation Areas

In Wyoming Yellowstone National Park, the oldest and largest of the national parks in the United States and one of the most popular vacation spots for American families.

Grand Teton National Park, a scenic park with many glacial-carved peaks and lakes. The Teton Mountain Range, and hanging valleys, forested lower slopes, and the basin called Jackson Hole are all encompassed in the park and adjacent national forests.

Teton Wilderness, an area of superb mountain scenery lying south of Yellowstone National Park. Over 330,000 acres of this 564,000-acre wilderness area lie within the subregion.

In Idaho Craters of the Moon National Monument, lava fields studded with cinder cones from recent volcanic activity. The monument derives its name from the unusual geologic formations that resemble craters on the moon.

Realm of the Buttes, the buttes lying west of Idaho Falls are extinct craters that were landmarks for emigrants in the early days. Some of the buttes have unique ecological associations of plants and animals.

Big Desert and Arco Desert, lying on the Snake River Plain, is a vast area of the lava cap which is mostly desert with large outcroppings of rugged lava flows. The famous National Reactor Testing Station, operated by the Atomic Energy Commission near Arco, is an outstanding attraction.

Lost River and Birch Creek Sinks. This area has interest to the sightseer as well as geologist. It is theorized that water enters the lava cap and flows into a large underground reservoir and appears over a hundred miles away at the well-known Thousand Springs area along the Snake River

Henrys Lake Area, located at the headwaters of Henrys Fork of the Snake River, this area is rich in scenic beauty and history. The area abounds with wildlife including bear, moose, elk, antelope, and deer and contains some of the finest fishing lakes and streams in the subregion. Due to its proximity to Yellowstone National Park, the area is rapidly developing as a major tourist attraction and numerous private and public recreation areas are being developed.

Adding to the beauty of the area are the Upper and Lower Mesa Falls on the Henrys Fork and the Big Springs at the head of the North Fork of the Snake River.

St. Anthony Sand Dunes. This large series of shifting sand dunes located west of Ashton, Idaho, offers a wide variety of recreational opportunities and provides an important winter range for wildlife.

Sun Valley and Jackson Hole areas. These recreation areas are known throughout the world for winter sports. In addition, they offer excellent recreational opportunities during other seasons of the year.

Mt. Borah, the highest peak in Idaho (12,655 feet) located in the center of the Lost River Range which contains several other peaks over 10,000 feet elevation.

Oregon Trail. This 2,055-mile trail passes through the subregion along Bear River and the Snake River. There are numerous historic and recreational sites on or near this route.

Table 46 summarizes the major resources.

Table 46 - Major Recreation Resources in All Ownerships, Subregion 4

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	25	196.2	
Lakes and Other Slack Water	6	22.1	
Other Water			
Small		28.0	
Large		48.4	
Total Water Surface		294.7	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	3		225
Established Roadless Areas	2	562.4	
Established Scenic Roads			830

Source: Tables 1, 7, and 8.

Existing Supply

Table 47 shows the acreage of land within this subregion used for, or suitable for, recreation. Acreages administered by various levels of government also appear in this table.

Table 47 - Acreage of Inventoried Lands by BOR Classes, Subregion 4, 1964^{1/}

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	0.65	0.01	0.14	0.82	-	1.62
II	76.15	0.17	0.18	0.09	-	76.59
III	12,789.97	34.00	0.97	0.01	-	12,824.95
IV	100.48	-	-	-	-	100.48
V	1,080.85	48.74	-	-	-	1,129.59
VI	1.13	0.09	-	-	-	1.22
Total Classed	14,049.23	83.01	1.29	0.92	-	14,134.45
Not Classed	738.47	972.99	45.21	17.68	6,773.00	8,547.35
Grand Total ^{3/}	14,787.70	1,056.00	46.50	18.60	6,773.00	22,681.80

^{1/} BOR classes are described in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Land and Mineral Resources.

With the exception of Yellowstone and Grand Teton National Parks, most of the Federal lands classified for recreation in Subregion 4 consist primarily of national forests and public domain under multiple use management. Some 10.1 million acres fall within the natural environment categories; i.e. Natural Environmental Areas, Outstanding Natural Areas, and Primitive Areas. These lands are varied, interesting, generally removed from the centers of population, and have few public roads or permanent habitations.

In addition to the recreation lands which have been classed, there is a total of 294,613 acres of water surface of lakes, streams, and reservoirs which add substantial recreation opportunity to the subregion. The supply includes 25 reservoirs over 5,000 acre-feet in capacity. These reservoirs account for 196,000 acres of water surface with small water impoundments^{1/} accounting for 28,000 acres and the remaining areas accounting for 70,613 acres of water surface.

^{1/} Located on Federal land, operated by private enterprise.

A total of 830 miles of scenic roads is also part of the important recreation features of the subregion.

The general locations of existing recreational resources are shown in figure 15.

Developed facilities occupy 2,300 acres of the over 14 million acres classified for recreation use. More important, however, the lands in the intensive use classification are sufficient to meet present and future demands.

Table 48 lists reported information on the extent of recreation development in the subregion. This list includes only those facilities for which information was uniformly available.

Table 48 - Facility Development, Subregion 4

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	1,093	7	1	14	1,115	-	1,115
	Units	1,857	15	12	30	1,914	-	1,914
Trailer	Acres	450	-	1	6	457	-	457
	Units	981	-	1	43	1,025	1,616	2,641
Group	Acres	304	-	5	8	317	-	317
Picnicking	Acres	312	52	4	170	538	-	538
	Units	1,014	212	30	590	1,846	-	1,846
Marinas	Number	14	-	-	-	14	NA	14
	Slips	122	-	-	-	122	NA	122
Winter Sports	Number	8	-	-	-	-	5	13
	Lifts or Tows	37	-	-	-	-	16	53
Swimming Beaches (Organized)	Acres	12	4	-	5	21	NA	21
Parks and Playgrounds	Number	1	7	2	62	72	-	72
	Acres	40	12	6	226	284	-	284

Dash (-) not reported

NA - Not Available

Private enterprise plays an important role in the overall recreation picture in the Upper Snake Subregion. This subregion has nearly 7 million acres of private land. Facilities provided range from primitive campgrounds to elaborate resorts such as the world famous Sun Valley ski resort which offers a range of activities designed to encourage year-round use. However, the abundance of public lands available for recreation use places the private sector--which must make a profit to survive--in a precarious position. To survive, the private recreation manager must be aware of, and take advantage of, opportunities provided on public lands.

Use of Recreation Resources

In 1965 the estimated recreation attendance at all recreation sites in the Upper Snake Subregion was about 6 percent of that for the entire Columbia-North Pacific Region. Applying national averages for participation in outdoor recreation activities



LOCATION MAP

Base Rev. Oct. 1969



indicates that much of this use is occasioned by demand originating outside the subregion. The presence of nationally significant recreation resources in the subregion probably accounts for much of this out-of-subregion demand.

Reported and estimated visitation to the recreation sites in the subregion are shown in table 49.

Value of Outdoor Recreation and Tourism

Outdoor recreation and tourism is an important industry in Subregion 4. A review of the Bonneville Power Administration study (22) of this industry showed recreation expenditures within the subregion included \$55 million by tourists and \$27 million by nontourists. The total of \$82 million represents the equivalent of 9,000 employees, and adds considerably to the subregion's economy. Only a small part of the outdoor recreation and tourism potential of the subregion has been tapped. There is a sizable opportunity for both public and private developments in the subregion.

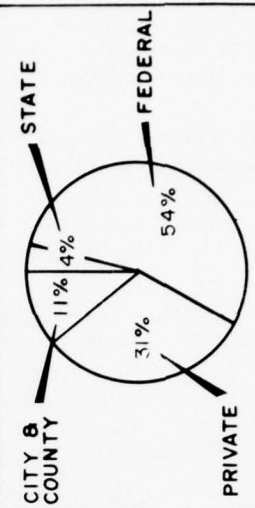
FUTURE DEMAND

Population, income, access, and resource availability play major roles in the recreation demand in the Upper Snake Subregion. Due to the existence of nationally important resources in the subregion (e.g., Sun Valley, Craters of the Moon National Monument, and Grand Teton National Park), regional and national rather than subregional and regional demography and economics provide the basis for estimates of future use.

The Upper Snake Subregion's population is expected to increase to 350,900 in 1980 and reach about 576,000 by the year 2020. An increasing percentage of this population is expected to be concentrated in the major urbanized areas. With completion of the interstate highway system and improvement in the secondary roads, the demand for outdoor recreation is expected to be as shown in figure 16.

Table 49 - Recreation Use, Subregion 4, 1965

Land Administering Agency	Water			(1,000 Recreation Days)			Sight-seeing		Hunting	Other	Total
	Swimming	Boating	Skiing	Fishing	Camping	Picnicking	Winter Sports	Summer			
Forest Service	40	70	30	450	350	540	800	190	190	140	2,800
Bureau of Land Management	5	15	5	60	28	35	49	19	169	8	391
Bureau of Reclamation	42	138	10	39	430	866	1,525	2	2	246	3,300
National Park Service											
Corps of Engineers											
Bureau of Sport	1	3	2	8	16	14	188	2	2	35	269
Fisheries & Wildlife	5	8	3	4			4	1	1	7	32
Other Federal											
State Agencies	159	15		68	2	221	188	37	37	3	519
County & Municipal				7	2	403	83			672	1,341
Private	84	83	16	69	278	695	949	680	539	441	5,834
Total	334	332	66	705	1,106	2,774	3,786	891	940	1,552	12,486



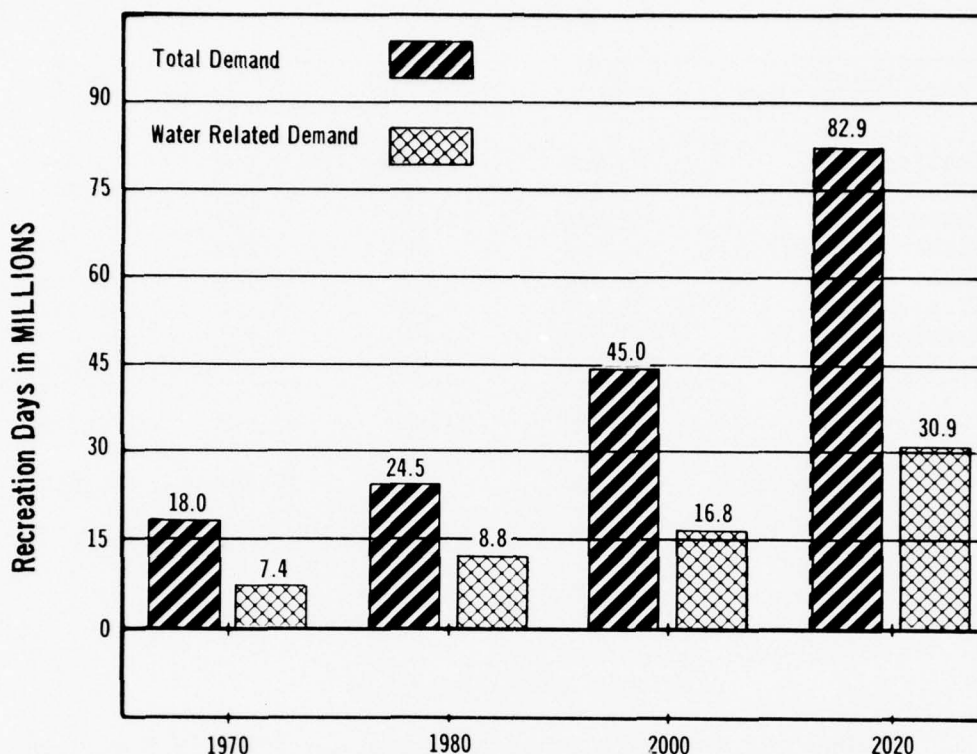


FIGURE 16 Expected Growth of Recreation Demand Subregion 4

This demand constitutes about 5 percent of the total demand in the Columbia-North Pacific Region. In comparison, the subregion has 4.5 percent of the total population.

Due to the geographic isolation of the subregion, the majority of the future demand is expected to be generated by subregion residents. A significant nonresident demand, however, can be expected in areas such as Sun Valley and Grand Teton National Park. In addition, U.S. Interstate 80N, crossing the lower part of the subregion, can be expected to contribute significant numbers of tourists.

The water related activities include both those requiring actual water surface such as swimming, fishing, boating, and water skiing, in addition to those activities that occur on land but are enhanced when located near the water. Demand for water related activities is shown in table 50.

Table 50 - Projected Demand, Water Related Recreation
Subregion 4

Activity	1970	1980 (1,000 Occasions)	2000	2020
Boating	950	1,050	2,000	3,700
Water Skiing	385	462	892	1,652
Swimming	2,848	3,412	6,597	12,207
Fishing	795	980	1,297	1,692
Sightseeing	4,842	5,800	11,214	20,753
Picnicking	3,837	4,596	8,886	16,444
Camping	2,513	3,010	5,820	10,771
Other ^{1/}	2,330	2,790	5,394	9,981
Total	18,500	22,100	42,100	77,200
Recreation Days ^{2/}	7,400	8,800	16,800	30,900

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

OUTDOOR RECREATION NEEDS

Comparison between recreation demand for 1970 (22.5 million) in the Upper Snake Subregion and the estimated 1970 use (14.3 million) indicates that about 64 percent of the total subregion demand was being met at inventoried facilities. Undoubtedly there is a portion of the demand being met at noninventoried facilities, but the extent of this use is not known. The capacity of the inventoried lands is adequate to accommodate recreation demand until after 1980, and the capacity of the inventoried water areas is adequate to meet water based recreation demand until after the year 2000. The development of the supply potential on both lands and waters is presently lagging behind and, at the current rate of development, will become more acute in the future. Figure 17 represents the need for recreation land and water development in Subregion 4.

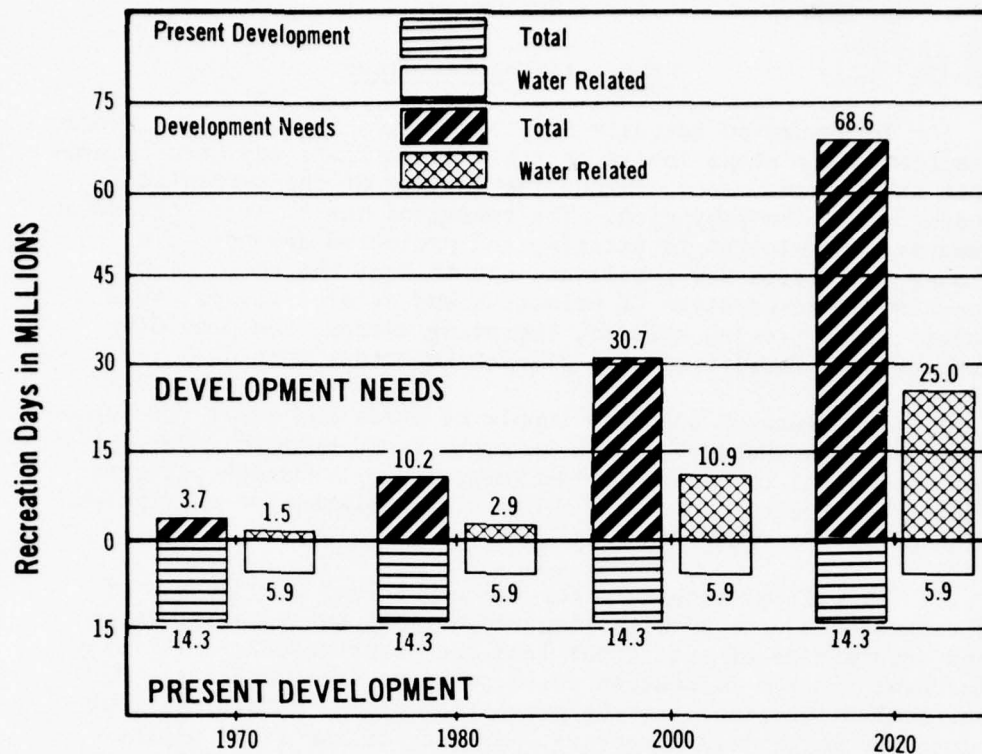


FIGURE 17 Need for Recreation Facility Development Subregion 4

Considerable need exists within a 50-mile radius of the subregion's major population centers. These needs center around land and water resources needed to support urban-oriented activities such as walking for pleasure, playgrounds, spectator sports, picnicking, and swimming. Camping acreage is inadequate in the vicinity of population centers, but a surplus exists outside the 50-mile zone. Although there is a surplus of acreage for camping outside the 50-mile zone, there is a deficit of developed campgrounds.

Figure 18 is a map showing potential development areas.

MEANS TO SATISFY NEEDS

Protection of Resources

To assure an adequate supply of lands and water for future use, immediate steps should be taken to initiate measures to protect and in some cases enhance the quality of the recreation resources of the subregion. The subregion has a large recreation capacity in relation to existing and projected demands. In providing facilities for public use and to meet the needs of other functions, preservation of primitive and natural values, open spaces, free flowing streams, improving access, and providing interpretive facilities will play an important role.

To assure an adequate supply of lands and water for future use, measures should be taken to protect and enhance water quality and ecological character of the subregion. Landscape patterns should be studied to provide a basis for maintenance and improvement of environmental quality.

It will be necessary for the county and city levels of government to come up with long-range plans for identification and acquisition of sufficient land and water resources to fully cooperate in the recreation development of the subregion. Of particular importance is the protection of the natural setting along the major stream courses. A study of the flood plains should be made to determine if there is a need for zoning to protect the environmental and scenic aspects of these important lands, especially near the urban areas where there is immediate danger from development of residential and commercial enterprises.

Historical resources such as vestiges of the Oregon Trail and early Indian settlements should be identified and preservation and interpretation measures outlined.

In terms of specific proposals, the States of Idaho, Wyoming, and Utah should:

1. Establish systematic review procedures for thorough consideration by natural resource and recreation agencies of the values of natural, historic, and archeologic resources before private or public development projects are permitted to encroach on them.

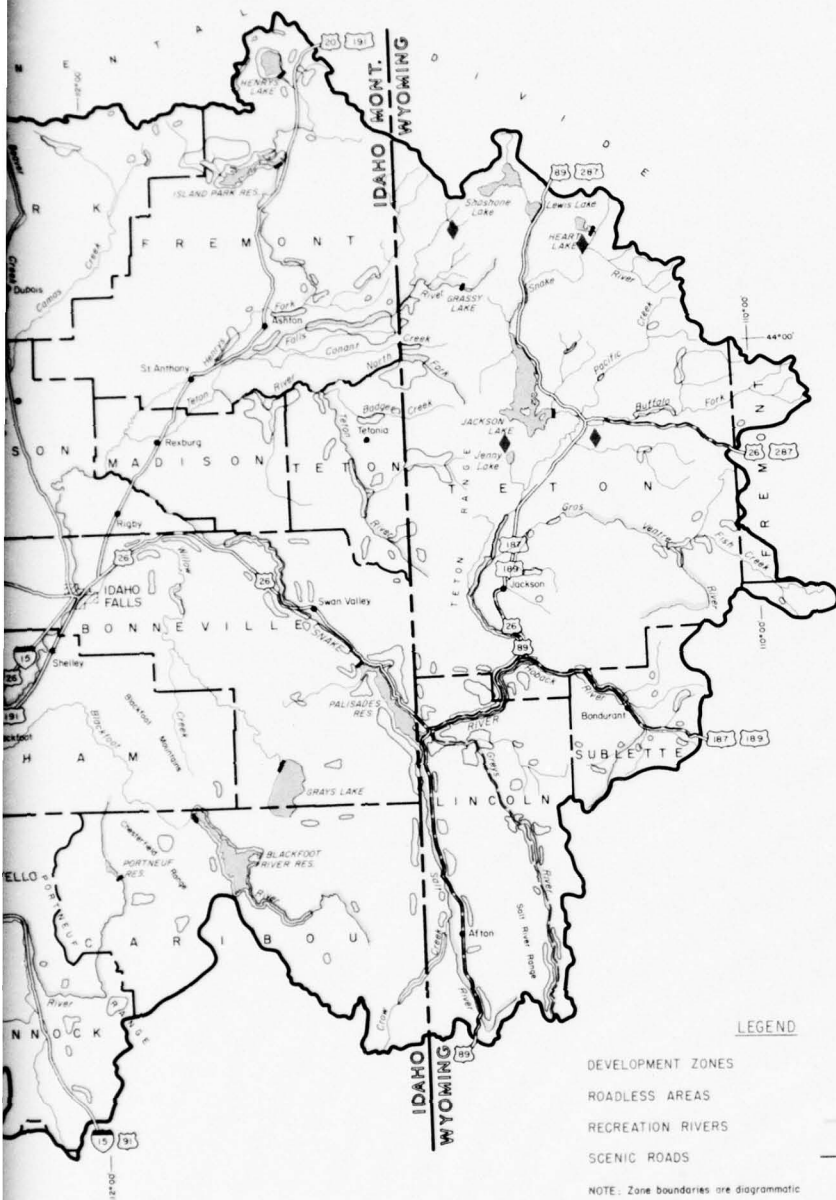
2. Establish an interstate committee to set up criteria and advise state transportation agencies on environmental quality aspects for highways and other transportation facilities and individual projects involving major environmental policy issues.



LOCATION MAP

Base Rev. Oct. 1969





COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**POTENTIAL
RECREATION AREAS**
UPPER SNAKE SUBREGION 4

FIGURE 18

3. Designate, acquire, or otherwise protect natural areas common to the three states as part of a system representative of natural landscape types, natural vegetation, and geologic history.

To provide the widest range possible for water-based recreation it is necessary to maintain a balance between free-flowing stream segments and slack water opportunities. Where streams pass through population concentrations, the values for recreation are increased. Streams which pass through population centers such as Idaho Falls are of particular value for recreation. At other points such as below the Jackson Lake Dam in Grand Teton National Park, float trips are an important segment of use of the rivers. A preliminary list of streams or stream segments in the subregion which have potential recreation values is shown in table 51.

Table 51 - Principal Recreation Streams, Subregion 4

Description	Miles	Acres at 320/mile
<u>Rivers selected for 5(d) status under the Wild and Scenic Rivers Act, P.L. 90-542.</u>		
Snake River - segments from origin in Yellowstone National Park to head of Jackson Lake and from Jackson Lake Dam to Palisades Reservoir.	117	37,440
Henry's Fork - from Warm River to Big Springs.	65	20,800
Gros Ventre - origin to boundary of Grand Teton National Park.	43	13,760
<u>Other</u>		
Snake River - west boundary of subregion to Twin Falls.	30	9,600
Confluence with Raft River upstream to American Falls Reservoir.	22	7,040
Blackfoot to Palisades Dam.	137	43,840
Portneuf River - from origin to Inkom.	53	16,960
Blackfoot River - from origin to Blackfoot Reservoir.	20	6,400
Salt River - from origin to Palisades Reservoir.	51	16,320
Falls River - from origin to confluence with Henry's Fork.	55	17,600
Teton River - from origin to Newdale Bridge.	58	18,560
North Fork Teton River - from origin to confluence with Teton River.	28	8,960
Medicine Lodge Creek - main stem.	27	8,640
Big Wood River - above Magic Reservoir, main stem of North Fork.	51	16,320
Big Lost River - above Mackay.	25	8,000
North Fork - entire stream.	10	3,200
To confluence with Big Lost River.	11	3,520
Silver Creek - origin to confluence with Little Wood River.	6	1,920
Warm River - entire stream.	20	6,400
Hoback - origin to confluence with Snake River.	44	14,080
Greys River - origin to confluence with Snake River.	55	17,600
Total Miles Section 5(d)	225	72,000
Total Miles Other Rivers	703	224,960
Subregion Total Miles and Land Acreage	928	296,960

Development of the Resource

There are a few basic needs that have high priority and would occur under several of the alternatives available.

It will be noted that county and city recreation resources are quite minor when compared to the State and Federal resources. Much of the demand generated by the resident population is for high intensity day-use recreation. One of the top priorities, therefore, is for concentrated effort to increase the supply and capacity of recreational opportunities for the residents of urban areas.

Table 52 lists the estimated land and water requirements by activity.

Table 52 - Land and Water Requirements for Water Related Demand, Subregion 4

Activity	1970	1980	2000	2020
		(acres)		
Camping and Picnicking				
Land	2,400	3,300	6,100	11,500
Water	4,800	6,600	12,200	23,000
Swimming				
Land	40	50	90	170
Water	120	150	270	510
Boating and Water Skiing				
Land	180	220	430	840
Water	8,900	10,800	21,000	38,600
Shoreside Hiking				
Land	450	610	1,100	1,700
Water (Not determined)				
Total Land (Rounded)	3,100	4,200	7,700	14,200
Total Water (Rounded)	13,800	17,600	33,500	62,100

Table 53 presents an estimate of the acquisition and development needs by level of administration.

Table 53 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 4

	(1) Land ^{1/} Inventory BOR I & II	(2) Existing ^{2/} Facility Development	(3) Water Related ^{3/} Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	69.1	2.1	2.4	4.3	8.0	-	-	-	0.3	2.2	5.9
State	0.1	0.1	0.2	0.4	0.7	0.1	0.3	0.6	0.1	0.3	0.6
County and Municipal	0.1	0.1	0.3	0.6	1.1	0.2	0.5	1.0	0.2	0.5	1.0
Private	0.2	0.2	1.3	2.4	4.4	-	-	-	1.1	2.2	4.2
Total	69.5	2.5	4.2	7.7	14.2	0.3	0.8	1.6	1.7	5.2	11.7

^{1/} Data from table 47 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{2/} Data from table 48 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{3/} Data from figure 17.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

Water related recreation needs for specific activities display a deficit in available water area in terms of access and development. These are discussed by activity below.

Swimming

Sufficient water surface area to meet the demand for swimming exists within the subregion. However, additional beach development and access are required in the nonurban areas. Based on the projected demand, the beach area required by 1970 will total 122 acres, increasing to 165 in 1980, 304 in 2000, and 560 by 2020. Location of these areas cannot be determined at this time.

Urban swimming needs will require construction of additional swimming pools, both private and public.

Boating

The following table lists the estimated number of pleasure boats and projections:

Table 54 - Pleasure Boats and Projections, Subregion 4^{1/}

Item	1970	1980	2000	2020
Trailered	8,300	10,000	19,400	35,700
Car Top	1,400	1,700	3,300	6,100
Moored	1,700	2,100	4,100	7,500
Stored	500	600	1,200	2,200
Total	11,900	14,400	28,000	51,500

^{1/} Based on preliminary data from Survey of Boating Need, State of Idaho, Corps of Engineers, 1969.

On the basis of the above information, the estimated number of lanes of boat launching ramps required to accommodate the pleasure boats is as follows:

1970	1980	2000	2020
83	100	194	357

Boating water will include both still water as reservoirs and lakes and moving water. The latter will accommodate white water canoeing and float trips in canoes, prams, kayaks, rubber rafts, and fold boats.

Fishing, cruising, and water skiing are the primary boating uses of the still-water category. Heaviest use comes on weekends with the months of July and August receiving a large share of the pressure.

Though the subregion basically has sufficient water area to support the anticipated boating use, additional access sites will be needed to permit use of the water and thus satisfy the demand. Land area required for boating access sites is as follows:

1970.....	180 acres
1980.....	220 acres
2000.....	430 acres
2020.....	840 acres

This acreage need could be met by providing access to existing water or by addition of more water surface from reservoir development.

Camping and Picnicking

There is a great need to expand the capacity of the camping and picnicking facilities in this subregion both now and in the future. Sites located close to the main routes of travel and near the population areas have the highest need. The land requirements to accommodate these activities adjacent to water--either stream, lake, or reservoir--are estimated to be 2,400 acres in 1970, 3,300 acres by 1980, 6,100 acres by the year 2000, and 11,500 by 2020. It may be necessary to acquire private lands to provide public facilities near the population areas if private interests do not undertake such development.

Hiking

There are probably ample trails in the national forests, national parks, and public domain lands to accommodate the need for hiking and horseback riding; however auxiliary trails are needed to disperse use near populated areas. Trail development is also needed to provide fishing access to some high lakes or along streams. A good potential exists for use of spoil banks along the irrigation canals for hiking trails.

Driving for Pleasure and Sightseeing

This subregion has a good supply of surfaced scenic roadways and many miles of unsurfaced roads. The primary needs for enhancement of these activities will be to improve and expand the existing road system. A good road system has been developed for users visiting Grand Teton and Yellowstone National Parks and this same type of development is needed to open some of the less known but equally spectacular areas in the subregion. Areas such as the Arco Desert and Craters of the Moon National Monument have climates too severe for much foot travel but they provide excellent opportunity for automobile sightseeing trips. The Oregon Trail running across the southern part of the subregion could provide an excellent sightseeing route with many interesting historic and recreational stops. For overall subregion requirements, the primary needs are the provision of diversified types of landscapes and historic zones that can be viewed from the roadway along with supporting facilities for picnicking, camping, and interpretation.

Winter Sports

The subregion has excellent natural resources for winter sports. The internationally famous ski resorts of Sun Valley, Idaho, and Jackson Hole, Wyoming, draw large numbers of out-of-subregion and international visitors. There are numerous potential areas in the subregion, but considerable development will be needed to meet future needs. There also is a need to develop a system of trails for snow vehicles and snow play areas near population centers.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies.

Table 55 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance and replacement cost at \$0.25 per day, and the cost associated with the suggested studies.

Table 55 - Development and Study Costs of Recreation Programs, Subregion 4

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	12,035	33,200	58,515	103,750
Annual OM&R	725	2,000	3,525	6,250
Study Costs				
Free Flowing Rivers	806	-	-	806
Roadless Areas	607	-	-	607
Scenic Roads	8	-	-	8
Total	14,181	35,200	62,040	111,421



LOCATION MAP

5 20-000000

SUBREGION 5
CENTRAL SNAKE

PRESENT STATUS

The Recreation Setting

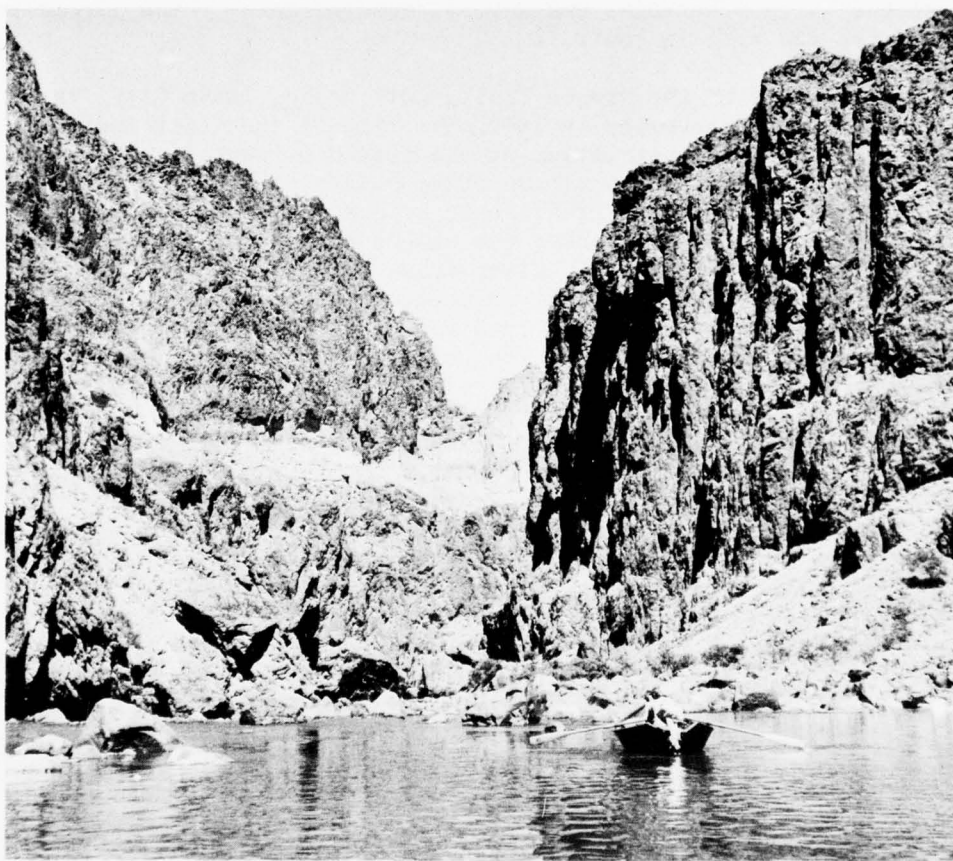
The subregion has an area of 36,824 square miles. About three-fifths are within Idaho, two-fifths in Oregon, and a small portion in Nevada. The Snake River bisects the area in the shape of an arc. Major tributaries are the Bruneau, Owyhee, Malheur, Powder, Burnt, Weiser, Payette, and Boise Rivers. There are numerous large reservoirs and several natural lakes. The landscape is varied and rich in contrast.

Remnants of the Oregon Trail, Fort Boise, Idaho City, the scene of gold discoveries in 1862, the site of the "Last Spike" ceremonies in the construction of the transcontinental railroad at Huntington, Oregon, and numerous other points of historic interest exist in the subregion. Prehistoric evidence occurs in Gooding County near the City of Rocks, the Givens Hot Springs area of the Snake River, and the Garden Valley area, all in Idaho, and the Owyhee, Malheur, and Powder River portions of Oregon. The central Snake River region was native land for Shoshone people in Idaho and Paiute groups in Oregon. The northern boundary of the region is south of but near to the historic boundary between Shoshone and Nez Perce peoples in west-central Idaho. Archeological surveys in 1958 and 1959 suggest that this boundary lay at or near the Snake River south of Boise 600-700 years ago. Coupled with these cultural resources are those landscape units with visual and esthetic qualities important to the overall recreation picture. The landscape is rich and varied. Prominent features include the Jarbidge Mountains in Nevada, the awe-inspiring Bruneau Canyon and the spectacular Bruneau Sand Dunes, the Owyhee Mountains and Owyhee Canyon, lava flows at Jordan Craters, Blue and Southern Wallowa Mountains in Oregon, and the Sawtooth Range and Soldier Mountain in Idaho. Ecological associations consist of the desert, the lush pine forests, and the alpine regions.

Elevations range from 1,800 feet in the Snake River Canyon to 2,700 feet at Boise to 10,000 on the highest peaks. With the exception of the Snake River Plains and a few upland valleys, most of the topography is rugged.

The precipitation varies from 8 to 10 inches in the southwestern portion and lower elevations to 20 to 30 inches in the northern portions and the higher elevations; much occurs as snow. Winters are frequently mild and pleasant in the Snake River Canyon and Boise Valley, but long and cold at the higher elevations. Summers are warm and dry; fall weather is also ideal for outdoor activities. There is a high percentage of sunshine during all seasons, and over most of the subregion the air is pure.

Vegetation ranges from parched cheatgrass slopes through sagebrush, lush irrigated fields and orchards, juniper-pinon, mountain mahogany and serviceberry, ponderosa pine, larch, Douglas fir, lodgepole pine, to grasses and flowers of the alpine meadows. Excellent fishing includes sturgeon, small mouth bass, other spiny ray species, and many varieties of trout. Big game animals are plentiful, including mule deer, pronghorn, elk, moose, mountain



Drifting along in quiet solitude in a calm stretch of the Owyhee River, the river traveler has a chance to enjoy the canyon views. (Bureau of Land Management Photo)

sheep, mountain goats, bear, and cougar. The area abounds in upland game such as ringneck pheasant, chukar, grouse, quail, and cottontail rabbit. Migratory waterfowl are plentiful. Opportunities for hunting, fishing, nature study, water sports, winter sports, camping, rock collecting, hiking, and wilderness trips are among the best in the Nation. Because of the wide variety of topography and climate, many recreation opportunities are available the year around and are easily accessible to population centers by major transportation routes.

The total population of the subregion in 1965 was 268,200. (17) About 52 percent lived in urban centers such as Boise, Mountain Home, Nampa, and Caldwell, Idaho; and Ontario, Nyssa, and Baker, Oregon. The remainder, or 48 percent, reside on farms or in rural communities.

Settlement of this subregion emanated from the Oregon Trail, first by fur traders and later by emigrants traveling west to the Oregon country.

One of the first developments was Fort Boise near the mouth of the Boise River, built by the Hudson's Bay Company. Gold strikes in the Powder River country in Oregon and Boise River in Idaho, about 1862, attracted many pioneers from the Willamette Valley. Traffic along the Oregon Trail was increased with the discovery of the Silver City mines near Jordan Valley in 1863. Native Indians were primarily the Bannocks and Shoshones, with which there was intermittent warfare until 1880.

Transportation was a major problem in development of the subregion until the transcontinental rail connection was completed in 1884 at Huntington. Afterward there was a rapid settlement and development of millions of acres of rich agricultural lands, most of which have been irrigated. Several major vehicular routes now cross the subregion, and it has good service by rail and airlines.

Available Outdoor Recreation Resources

Major Recreation Areas

In Nevada The Jarbidge Mountains and Wilderness area--spectacular mountain scenery arising from brush-grass plateaus, the headwaters of the Bruneau, Jarbidge, and East Fork Owyhee Rivers.

Wild Horse Reservoir, a famous fishing area in a colorful setting.

In Idaho Bruneau-Jarbridge Canyon, a magnificent gorge about 67 miles long, one of the deepest and narrowest in the United States.

Bruneau Sand Dunes, picturesque dunes spotted with clear lakes, include the Bruneau Sand Dunes State Park.

Thousand Springs--huge springs gush from the Snake River Canyon walls near Hagerman, site of one of the world's largest trout hatcheries.

Sawtooth Range, a land of exceptional alpine scenery and mountain lakes, includes over 150,000 acres of the Sawtooth Primitive Area.

Storage Reservoirs, 30 including Juniper Basin, Thief Valley, Antelope, Anderson Ranch, Arrowrock, Lucky Peak, C. J. Strike, Lowell, Nevada, Black Canyon, Cascade, Deadwood, Brownlee, and Oxbow, offer outstanding opportunities for water sports, fishing, camping, sightseeing, and waterfowl hunting.



Vestiges of bygone days - Silver City, Idaho. Old mining towns such as this one are of great interest to the local residents and a great attraction to nonresidents if promoted properly. (Bureau of Land Management Photo)

In Oregon Owyhee Canyon and Reservoir. The river above the reservoir flows through a rugged and colorful canyon in a primitive setting. The reservoir and adjacent Succor Creek and Leslie Gulch offer outstanding opportunities for fishing, hunting, rock collecting, and water sports in an unusually scenic desert setting.

Other storage reservoirs, including Malheur, Unity, Beulah, Bully Creek, and Warm Springs, all offer similar recreational opportunities.

Jordan Craters, one of the most recent lava flows in the United States, includes several lakes and excellent waterfowl habitat.

Wallowa Mountains, a rugged, picturesque area of glaciated granite, mountain lakes, and clear mountain streams, include nearly 200,000 acres of the Eagle Cap Wilderness.

Table 56 summarizes the major resources for the subregion.

Table 56 - Major Recreation Resources in All Ownerships, Subregion 5

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	36	121.1	
Lakes and Other Slack Water	3	0.7	
Other Water			
Small		37.5	
Large		48.6	
Total Water Surface		207.9	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	1		74
Established Roadless Areas	4	110.2	
Established Scenic Roads			1,350

Existing Supply

Table 57 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

This is the largest subregion in the region and also has the greatest acreage of public lands suitable for recreational use. Subregion 5 contains 9 percent of the region's fresh water surface

Table 57 - Acreage of Inventoried Lands by BOR Classes,^{1/}
Subregion 5, 1964

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	-	0.01	0.04	0.88	-	0.93
II	88.74	0.86	1.36	0.46	-	91.42
III	14,996.00	67.06	-	0.03	-	15,063.09
IV	203.27	0.73	-	-	-	204.00
V	110.25	-	-	-	-	110.25
VI	0.10	-	-	-	-	0.10
Total						
Classed	15,398.36	68.66	1.40	1.37	-	15,469.79
Not						
Classed	433.64	1,077.44	25.90	12.83	6,377.90	7,927.71
Grand						
Total ^{3/}	15,832.00	1,146.10	27.30	14.20	6,377.90	23,397.50

^{1/} BOR Classes are described in the Regional Summary

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Land and Mineral Resources.

but ranks only sixth in population. Recreation use of this large subregion is similar to the other subregions, indicating that it contains a large reserve of recreation resources. Federal lands, principally national forests and public domain lands mostly under multiple-use management, including recreation, make up approximately 80 percent of all inventoried area.

In addition to the recreation lands which have been classed, there is a total of 207,900 acres of water surface of lakes, streams, and reservoirs which add substantial opportunity to the potential of the region. The supply includes 37 reservoirs with over 5,000 acre-feet of storage, having a total of 123,400 surface acres. Smaller water bodies and streams account for an additional 37,500 surface acres of water. A total of 1,350 miles of scenic roads are also part of the important recreation features. There are four designated historic and natural history sites containing 100 acres of land. The Bruneau River has been designated for study to determine its potential for addition to the National Scenic and Wild Rivers System.

Private power companies operate six reservoirs, including a total of approximately 25,000 surface acres of water. Some

reservoirs are located in highly scenic settings. On such reservoirs, private power companies have provided recreation facilities including boat launching sites, picnic areas, and overnight campgrounds. They have also undertaken extensive operations to provide mitigation for anadromous fish runs in the Snake River through transplants to the Salmon River drainage.

There are also numerous small stock water and irrigation reservoirs scattered throughout the grazing land portions of the subregion. Some of these have a potential for providing additional recreation use capacity.

The general locations of existing recreation resources are shown in figure 19.

Table 58 lists reported information on the extent of recreation development. This list includes only those facilities for which information was uniformly available.

Table 58 - Facility Development, Subregion 5

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	106	21	10	5	142	103	245
	Units	308	114	-	30	452	204	656
Trailer	Acres	22	6	16	3	47	NR	47
	Units	189	NR	20	30	239	818	1,057
Group	Acres	3	1	NR	4	8	NR	8
Picnicking	Acres	142	46	55	207	450	NR	450
	Units	285	344	173	661	1,463		1,463
Marinas	Number	8	1	1	1	11	6	17
	Slips	240	160	NR	NR	400	160	560
Ski Areas ^{1/}	Number	4	NR	NR	NR	NR	NR	4
	Lifts and Tows	17	NR	NR	NR	NR	NR	17
Swimming Beaches (organized)	Number	11	5	6	1	23	2	25
	Acres	20	21	16	3	60	10	70

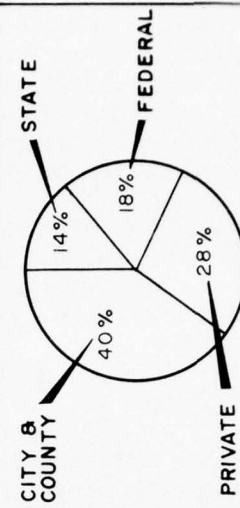
^{1/} Located on Federal land, operated under permit.
NR - None reported.

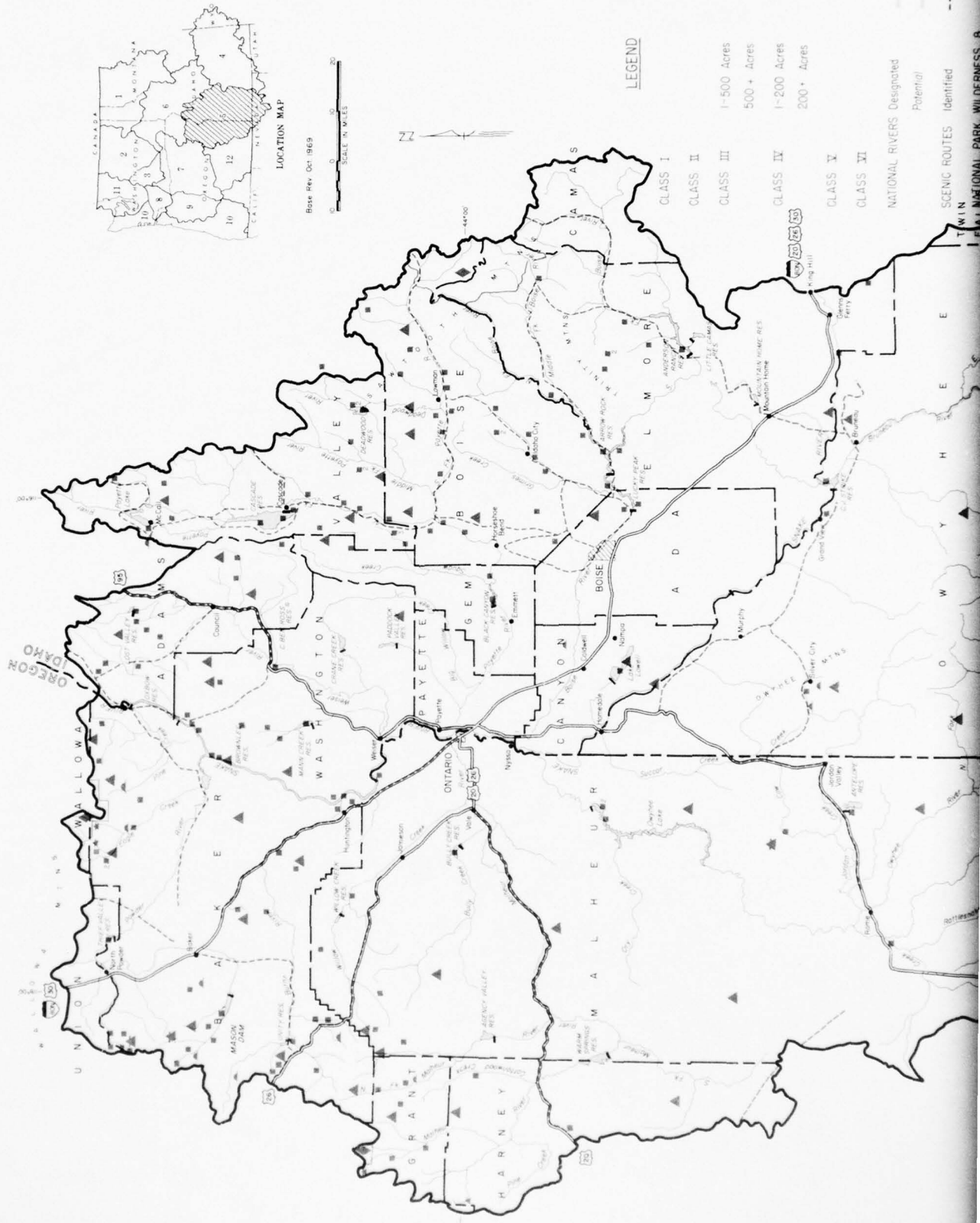
Use of Recreation Resources

The vast, uncrowded open space and drier climate of this subregion attracts many recreationists from the more densely populated subregions. Of the total 1965 recreational use of the Columbia-North Pacific Region, about 6 percent was inventoried in this subregion. Table 59 lists the use for 1965 by agency and by activity.

Table 59 - Recreation Use, Subregion 5, 1965

Land Administering Agency	Water Fish-					Picnick-		Sight- Winter		Other	Total
	Swimming	Boating	Skiing	ing	Camping	ing	(1,000 Recreation Days)	seeing Sports	Hunting		
Forest Service	15	25	10	205	110	100	155	115	146	35	916
Bureau of Land Management	8	20	10	141	48	65	360	6	323	49	1,030
Bureau of Reclamation		5	11		1	5	28				50
National Park Service											
Corps of Engineers											
Bureau of Sport											
Fisheries & Wildlife		28	9	40	2	35	70		16		200
Other Federal				11		5	10		1	11	38
State Agencies	249	86	71	44	198	218	517		48	195	1,626
County and Municipal	554	60	3	73	21	1,443	359		2	2,280	4,795
Private	284	66	38	96	125	629	426	180	551	896	3,291
Total	1,110	290	152	610	505	2,500	1,925	301	1,087	3,466	11,946





LOCATION MAP

Base Map, Oct. 1969



LEGEND

- 1-500 Acres
- 500+ Acres
- 1-200 Acres
- 200+ Acres

CLASS I

CLASS II

CLASS III

CLASS IV

CLASS V

CLASS VI

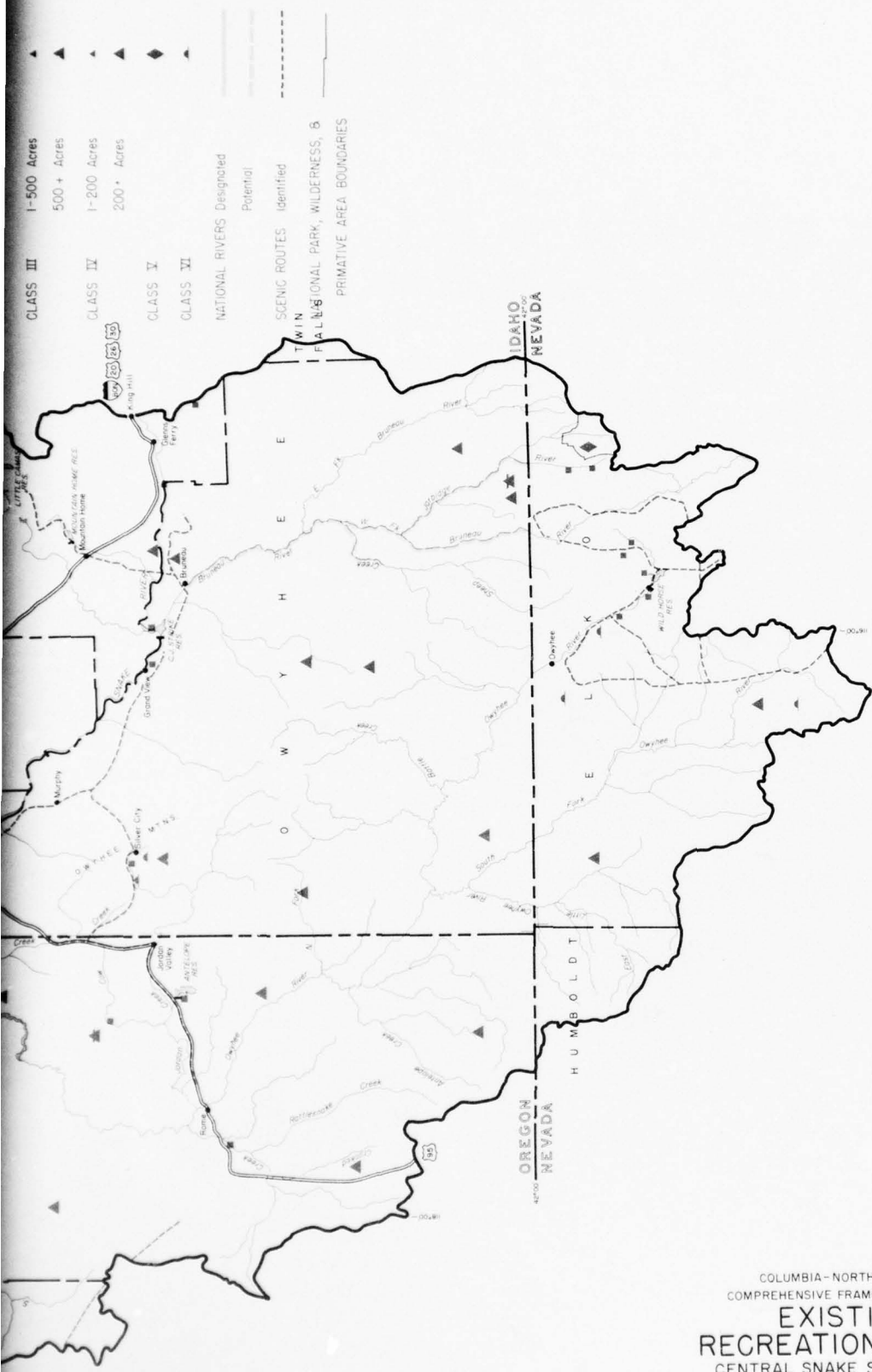
NATIONAL RIVERS Designated

Potential

Identified

SCENIC ROUTES

TWIN FALLS NATIONAL PARK WILDERNESS AREA



COLUMBIA-NORTH PACIFIC
 COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
 RECREATION AREAS**
 CENTRAL SNAKE SUBREGION 5

FIGURE 19

Value of Outdoor Recreation and Tourism

Recreation opportunities throughout this subregion have, as previously noted, been improved in recent years. The importance of this industry can be seen in the income attributed to recreation as presented in the Bonneville Power Administration study of recreation in the Pacific Northwest. Annual recreation expenditures within the Central Snake Subregion included \$55 million by tourists and \$27 million by nontourists for a total of \$82 million. These expenditures represent the equivalent of 9,000 employees and add considerably to the economy. Only a small part of the outdoor recreation and tourism potential of the subregion has been tapped. The opportunity for expansion of both public and private developments is enormous. Private financing of campgrounds has been a very recent undertaking in this area. The manufacture and sale of recreation equipment have become important to the economic structure of the subregion.

FUTURE DEMAND

The Central Snake Subregion's population is expected to increase to 328,700 in 1980 and reach about 553,500 by year 2020. An increasing percentage of this population is expected to be concentrated in the major urbanized areas despite the development of the agricultural potential of the arid lands through irrigation. With the completion of the interstate highway system and improvement in the secondary roads, the demand for outdoor recreation is expected to be as shown in figure 20.

The demand for outdoor recreation in the subregion is about 6 percent of that for the entire region, while the resident population is only 5 percent of the total.

The attraction of the resources to the populations in the Utah and California areas, coupled with the fact that one of the major east-west interstate highway systems passes through the area, are among the chief reasons for the nonresident use. Per capita income and other factors influencing recreation demand are expected to follow the same patterns as the region. The concentration of the population in the Boise Valley places a greater demand for the resources that are nearby.

The water-related activities include both those requiring actual water surface, such as swimming, fishing, boating, and water skiing, in addition to those activities that occur on land but are enhanced when located near the water. Demand for water-related activities is shown in table 60.

AD-A036 558

PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COLUMBIA-NORTH PACIFIC REGION COMPREHENSIVE FRAMEWORK STUDY OF --ETC(U)
JUN 71 E L ARNOLD, R P CLARK, R J COFFMAN

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Table 60 - Projected Demand, Water Related Recreation, Subregion 5

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	900	1,400	2,900	5,400
Water Skiing	360	480	930	1,700
Swimming	2,600	3,500	6,700	12,400
Fishing	689	848	1,122	1,464
Sightseeing	4,400	6,000	11,200	20,900
Picnicking	3,500	4,800	9,000	16,900
Camping	2,600	3,600	6,600	12,400
Other ^{1/}	200	1,000	5,900	10,100
Total	15,249	21,628	44,352	81,264
Recreation Days ^{2/}	6,100	8,700	17,700	32,500

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day rounded.

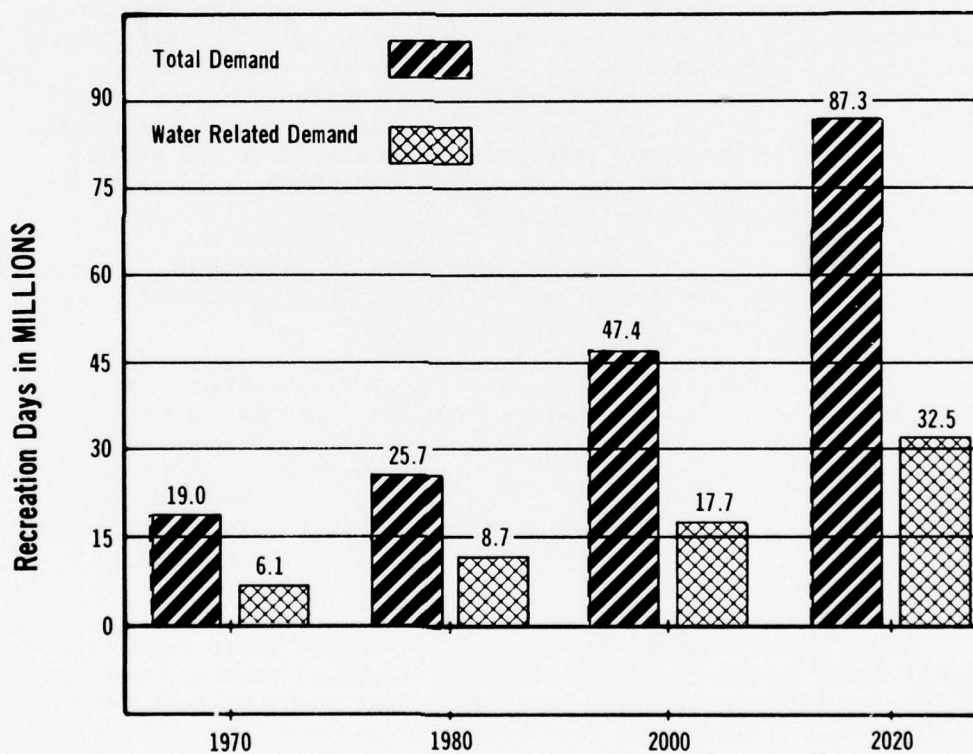


FIGURE 20 Expected Growth of Recreation Demand

Subregion 5

OUTDOOR RECREATION NEEDS

Comparison between recreation demand for 1970 (19 million) in the Central Snake Subregion and the estimated 1970 use (15 million) indicates that about 79 percent of the total subregion demand was being met at inventoried facilities. Undoubtedly there is a portion of the demand being met at noninventoried facilities, but the extent of this use is not known. The capacity of the inventoried public lands and waters is adequate to accommodate recreation demand until after the year 2000. The development of this potential is presently lagging behind and, at the current rate of development, will become more acute in the future. The need for recreation land and water development is shown in figure 21.

There are urgent needs for additional land and water when the area of consideration is limited to specific areas within the subregion. This is especially true within the day-use zones of the larger population concentrations and along the major routes of

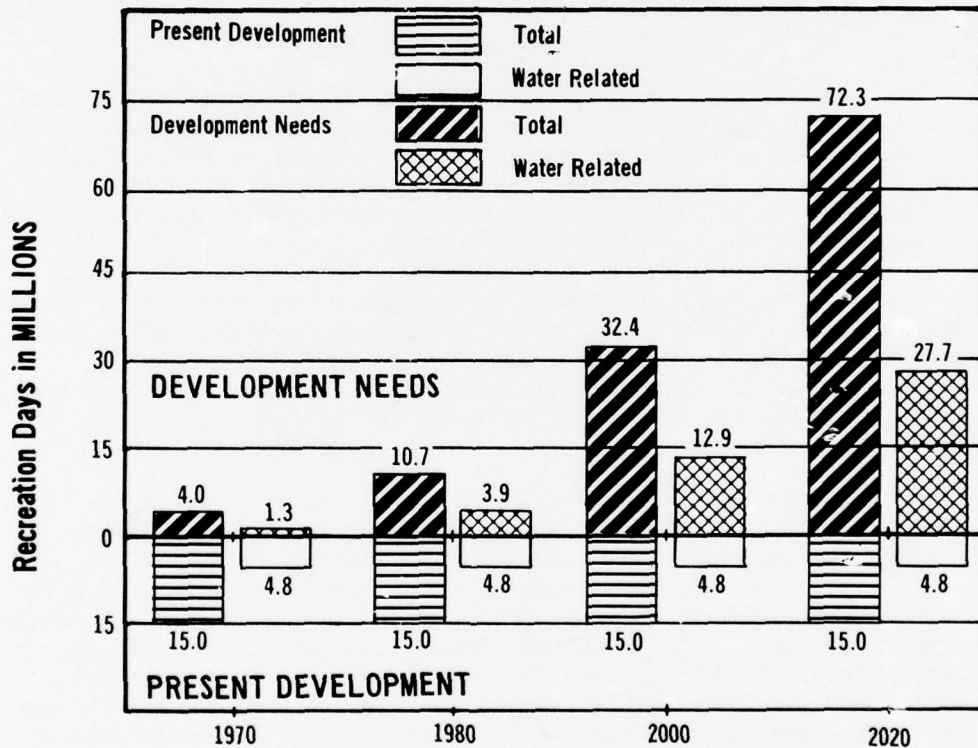


FIGURE 21 Need for Recreation Facility Development

Subregion 5

travel. There are imbalances between supply and demand when an analysis is made on the basis of the level of government.

The Idaho statewide outdoor recreation plan makes an analysis of the demand supply relationship within a 50-mile radius of the Boise population area. It indicates a deficit of 1,671,800 activity days for water-based recreation in 1970. To satisfy this need, the plan indicates a total of 18,575 additional acres of water would be required to meet this need (based on an annual use of 90 activity days annually per surface acre).

The private sector can play a very important role by developing high quality, high density recreation sites in the Boise area. The private developments should accommodate about 25 percent of the demand in the day-use zone for both water-associated and other categories.

MEANS TO SATISFY NEEDS

Protection of Resources

To assure an adequate supply of lands and water for future use, steps should be taken now to initiate measures to protect and, in some cases, enhance the quality of the waters of the subregion. The fragile ecological character of the alpine areas needs to be studied to determine the proper carrying capacity of recreationists to prevent a future loss due to overuse.

Archeological study of this subregion has been very limited. Because this is an area of intensive farming, prospective water development, and high population concentration, there is great urgency for additional archeological work. Surveys have been made of the principal potential reservoirs, but no major excavations have taken place.

It will be necessary for the county and city levels of government to come up with long-range plans for identification and acquisition of sufficient land and water resources to fully cooperate in the recreation development of the subregion. Of particular importance is the protection of the natural setting along the major stream courses. A study of the flood plains should be made to determine if there is a need for zoning to protect the environmental and scenic aspects of these important lands, especially near the urban areas where there is immediate danger from development of residential and commercial enterprises.

There is also a need to preserve the historic values such as Silver City and vestiges of the Oregon Trail as a part of the

heritage of both present and future generations. Idaho City, Placerville, and other historic sites of the mining days will have greater public appeal in the future.

The States of Oregon, Idaho, and Nevada should:

1. Establish systematic review procedures for thorough consideration by natural resource and recreation agencies of the values of natural, historic, and archeologic resources before private or public development projects are permitted to encroach on them.
2. Establish an interstate committee to set up criteria and advise state transportation agencies on environmental quality aspects for highways and other transportation facilities and individual projects involving major environmental policy issues.
3. Designate, acquire, or otherwise protect natural areas common to the two states as part of a system representative of natural landscape types, natural vegetation, and geologic history.

To provide the widest range possible for water-based recreation, it is necessary to maintain a balance between free-flowing stream segments and slack water opportunities. Where streams pass through population concentrations, the values for recreation are increased. The Boise River is an example of such a stream. The current plan is to provide a green belt along the river to connect river-adjacent parks within the city. This green belt could be extended along the Boise River to its confluence with the Snake and upstream to Lucky Peak Dam. Recreation use of the Boise River for float trips has been an important outlet for many local residents. The subregion has several streams that are available for both streamside use such as sightseeing, picnicking, camping, and water-based activities such as swimming, boating, fishing, and wading. A preliminary list of these recreation streams is listed in table 61.

Table 61 - Principal Recreation Streams, Subregion 5

Description	Miles	Acres at 320/mile
Rivers Designated for Study in the Wild and Scenic Rivers Act (P.L. 90-542 Sec. 5(a))		
Bruneau River - entire main stem from Idaho- Nevada border to confluence with Snake River	74	23,680

Table 61, Continued

Description	Miles	Acres at 320/mile
<u>Other</u>		
Bruneau River - Nevada segment from Idaho-Nevada	36	11,520
Jarbridge River - origin to confluence with Bruneau River	44	14,080
Snake River - from Hammett to east boundary of subregion	50	16,000
from Swan Falls to Walters Ferry	13	4,160
Owyhee River - from Owyhee Dam to the first diversion dam	11	3,520
from Lake Owyhee to Wild Horse Reservoir	213	68,160
North Fork Owyhee - main stem	24	7,680
Middle Fork Owyhee - main stem	17	5,440
South Fork Owyhee - main stem	93	29,760
Boise River - free-flowing segment from the North and Middle Forks to confluence with Snake River	64	20,480
North Fork - origin to confluence with Middle Fork	32	10,240
Middle Fork - origin to confluence with North Fork	39	12,480
South Fork - free-flowing segment from origin to Arrowrock Reservoir	89	28,480
Payette River - Black Canyon Reservoir to the fork joining the North and South Forks	32	10,240
North Fork - free-flowing segment from origin to confluence with South Fork	65	20,800
South Fork - free-flowing segment from origin to confluence with North Fork	<u>57</u>	<u>18,240</u>
Total Miles Federal Study Rivers Section 5(a)	74	23,680
Total Miles Other Rivers	<u>879</u>	<u>281,280</u>
Subregion Total Miles and Land Acreage	953	304,960

Development of the Resource

There are a few basic needs that will be of high priority and would occur under several of the different alternatives available.

It will be noted that county and city recreation resources are quite minor when compared to the State and Federal resources. Much of the demand generated by the resident population is for high intensity day-use recreation. One of the top priorities, therefore, is for concentrated effort to increase the supply and capacity of recreation opportunities for the residents of Ada, Canyon, and Payette Counties in Idaho, and in and near the cities of Boise, Nampa, Caldwell, Mountain Home, Payette, and Weiser, Idaho, and Ontario, Oregon.

Table 62 lists the estimated land and water requirements for Subregion 5.

Table 62 - Land and Water Requirements for Water Related Demand Subregion 5

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking				
Land	2,600	3,500	6,700	11,900
Water	5,200	7,000	13,400	23,800
Swimming				
Land	40	50	90	130
Water	120	150	270	390
Boating and Water Skiing				
Land	180	270	520	950
Water	9,100	13,400	24,700	45,300
Shoreside Hiking				
Land	500	650	950	1,700
Water (not determined)				
Total Land (Rounded)	3,300	4,500	8,300	14,700
Total Water (Rounded)	14,400	20,600	38,400	69,500

Table 63 presents and estimate of acquisition and development needs by level of administration.

Table 63 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 5

	(1)	(2)	(3)			(4)			(5)		
	Land1/ Inventory BOR I & II	Existing2/ Facility Development	Water Related3/ Development Needs			Land Acquisition Needs			Facility Development Needs		
	(1,000 Acres)		1980	2000	2020	1980	2000	2020	1980	2000	2020
							(1,000 Acres)				
Federal	79.8	0.3	0.8	1.4	2.5	-	-	-	0.5	1.1	2.2
State	0.6	0.1	1.0	1.8	3.2	0.4	1.2	2.6	0.9	1.7	3.1
County and Municipal	0.8	0.1	1.7	3.3	5.8	0.9	2.5	5.0	1.6	3.2	5.7
Private	0.3	0.3	1.0	1.8	3.2	-	-	-	0.7	1.5	2.9
Total	81.5	0.8	4.5	8.3	14.7	1.3	3.7	7.6	3.7	7.5	13.9

1/ Data from table 57 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

2/ Data from table 58 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

3/ Data from figure 21.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water-related recreation needs as viewed from specific activities.

Swimming

Taken in its entirety, there is more than enough water surface area to support all the demand for swimming. However, there will be a need to provide additional access and develop additional beach space at the nonurban sites. These should be located primarily in Ada and Canyon Counties. The urban needs can best be met by development of additional swimming pool area. Most of the pools are presently in private ownership connected with motel or residence use. More public pool space should be provided by the city development programs. A total of 40 acres of beach will be required by 1970, 50 acres by 1980, 90 acres by 2000, and 170 acres by 2020. The Idaho statewide outdoor recreation plan indicates a need for three additional pools within the 50-mile zone of Boise by 1970, and one additional pool in the 50 to 125-mile zone.

Boating

Table 64 lists the estimated number of pleasure boats and projections.

The need for water to operate the boats would include both running water for canoes, prams, kayaks, rubber rafts, and other boats. The availability of the types of water will influence the

demand for different kinds of watercraft. Fishing, cruising, and water skiing are the primary uses made of the pleasure boats, with the peak days coming on the weekends. The favorite month is July, with August a close second. Additional water access sites will be needed to accommodate the boating demand. A total of 170 acres will be required by 1970, 250 acres by 1980, 450 acres by year 2000, and 800 acres by year 2020.

Table 64 - Pleasure Boats and Projections^{1/}, Subregion 5

Item	1970	1980	2000	2020
Trailered	8,500	12,500	21,000	39,000
Car Top	1,400	2,100	4,700	8,500
Moored	1,700	2,500	5,500	10,000
Stored	500	700	1,500	2,900
Total	12,100	17,800	32,700	60,400

^{1/} Based on preliminary data from Survey of Boating Needs, State of Idaho, Corps of Engineers, 1969.

On the basis of the above information, the estimated number of lanes of boat launching ramps required to accommodate the pleasure boats is as follows:

1970	1980	2000	2020
80	125	200	400

Potential recreation development zones and areas are shown on figure 22.

Additional water surface acreage in the Boise area could be met either by providing access to existing water or by the addition of more water surface from reservoir development. Some possibilities are expansion of access to Lake Lowell and Lucky Peak, or by adding reservoirs on the Snake River. Enhancement of the recreation use of the Boise River could be obtained by providing stabilized flows below Lucky Peak Dam.

Camping and Picnicking

There will be a great need to expand the capacity of the camping and picnicking facilities in this subregion both now and in the future. Sites located close to the main routes of travel and near the population areas are of primary need. The land

requirements to accommodate these activities adjacent to water, either streams or lakes or reservoirs, is estimated to be 2,600 acres in 1970, 3,500 by 1980, 6,700 by year 2000, and 11,900 by year 2020. It may be necessary to acquire private lands to provide public facilities near the population areas if the private interests do not undertake such development. There should be ample developable land already in Federal ownership to accommodate the need for vacation and weekend use.

Hiking

There are probably ample trails on the national forest and public domain lands to accommodate the need for hiking and horseback riding; however, the establishment of trails along the Boise River would greatly enhance this activity. Trail development may also be needed to provide access to some high lakes or fisherman access to streams. A good potential exists for use of spoil banks along the irrigation canals for hiking trails.

Driving for Pleasure and Sightseeing

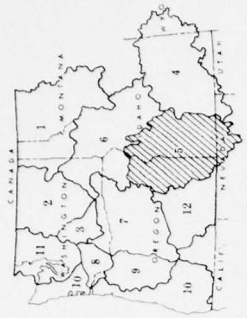
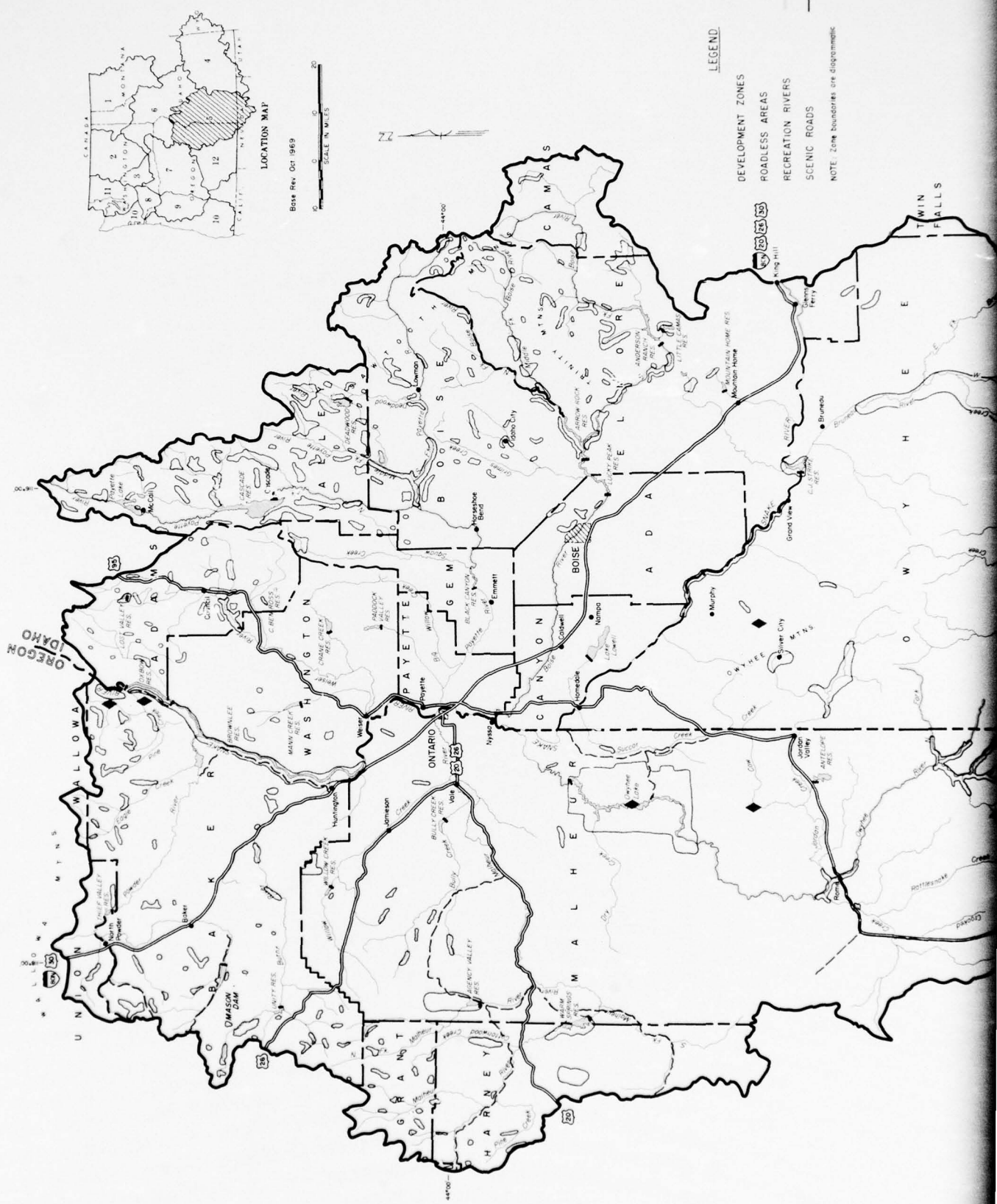
This subregion has an excellent supply of surfaced scenic roadways and many miles of unsurfaced roads. The primary needs to enhance these activities will be to improve the existing system. Many roads provide access to historic sites such as Idaho City and Silver City, scenic areas such as the Bruneau Canyon, wilderness thresholds, and recreation areas. The primary needs are to provide diversification of types of landscapes and historic zones that can be viewed from the roadway along with supporting facilities for picnicking, camping, and interpretation.

Winter Sports

The existing developed ski areas soon will need to be enlarged and additional ones developed. There also is a need to develop a system of trails for oversnow vehicles and snow play areas accessible to the population areas.

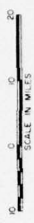
COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies. Based on the percentage of water-related demand to total recreation demand, there will be a need to accommodate the following:



LOCATION MAP

Base Rev. Oct. 1969



LEGEND

- DEVELOPMENT ZONES
- ROADLESS AREAS
- RECREATION RIVERS
- SCENIC ROADS

NOTE: Zone boundaries are diagrammatic

Table 65 - Water-Related Recreation Demand to Be Satisfied,
Subregion 5

	<u>1970</u>	<u>1980</u> (1,000 Recreation Days)	<u>2000</u>	<u>2020</u>
Total	1,280	3,520	11,620	26,470
Incremental	1,280	2,240	8,100	14,850

Table 66 presents the estimated capital investment cost at \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with the suggested studies.

Table 66 - Development and Study Costs of Recreation Programs,
Subregion 5

<u>Item</u>	<u>1970-1980</u>	<u>1981-2000</u>	<u>2001-2020</u>	<u>Total</u>
		(\$1,000)		
Development Costs				
Investment	16,185	37,350	61,420	114,955
Annual O, M & R	975	2,250	3,700	6,925
Study Costs				
Free Flowing Rivers	659	-	-	659
Roadless Areas	90	-	-	90
Scenic Roads	<u>8</u>	<u>-</u>	<u>-</u>	<u>8</u>
Total	17,917	39,600	65,120	122,637



LOCATION MAP

6 20-000000

SUBREGION 6

LOWER SNAKE

PRESENT STATUS

The Recreation Setting

The Lower Snake Subregion is composed of lands drained by the Snake River in southeast Washington, northeast Oregon, and central Idaho. The subregion has an area of 35,080 square miles, of which 70 percent is in Idaho, with the remainder almost equally divided between Oregon and Washington. Tributaries of the Snake River that provide drainage to the subregion include the Palouse in Washington; the Grande Ronde, Wallowa, and Immaha in Oregon; and the Clearwater, Lochsa, Selway, Salmon, and Lemhi in Idaho.

The subregion is bounded by the Bitterroot Mountains on the north and east, Blue Mountains on the west, and on the south by the Arco Desert, Boulder Mountains, and the Wallowa Mountains. Prominent natural recreational resources include the rugged and scenic canyons of the Clearwater, Selway, and Salmon rivers; the famous 5,500-foot deep Hells Canyon of the Snake River, which is the deepest gorge on the North American Continent; and numerous wilderness-type areas.

The struggle of white man for expansion and the red man for survival left its mark on the history of this subregion and provides a source of cultural enrichment for the scholar and recreationist. The white man's efforts are exemplified by the various aspects of the Lewis and Clark Expedition--Lolo Trail, Canoe Camp and Long Camp, and Spalding which is the site of an early mission. Whitebird Battlefield, Asa Smith Mission Site, First Presbyterian Church at Kamiah, Weippe Prairie, Camas Prairie, Saint Joseph's Mission, and the sites of the Cottonwood Skirmishes all commemorate the Nez Perce Indian Wars of the 1870's. It is likely that intensive studies will turn up many more sites of historical importance in "Nez Perce Country."

The region is of major archeological value because it is largely undisturbed by modern industrial society. Major excavations have been done in the Ice Harbor and adjacent lower Snake reservoirs under the direction of Washington State University. Idaho State University Museum excavations have taken place at two

isolated sites in the Salmon River system, at two in the Clearwater, and at several more along the Snake River. Long-term occupation of the region is represented at several sites such as the Marmes Rockshelter and the Granite Point locality in Washington, the Shoup and Weis Rockshelters in Idaho, and the Lenore village site in the lower Clearwater River Valley. The excavated sites represent less than one-tenth of one percent of the archeological resources within the Lower Snake Subregion.

The climate of the subregion varies considerably because of the mountainous terrain. Portions of the western part of the subregion are hot and dry during the summer months with temperatures frequently above 100°F with little or no precipitation. Conversely, the heavily timbered mountain slopes to the east generally remain moist with warm days and cool, refreshing evenings. Winters in both areas tend to be rather severe, with heavy snowfall in the east and winter rains in the west.

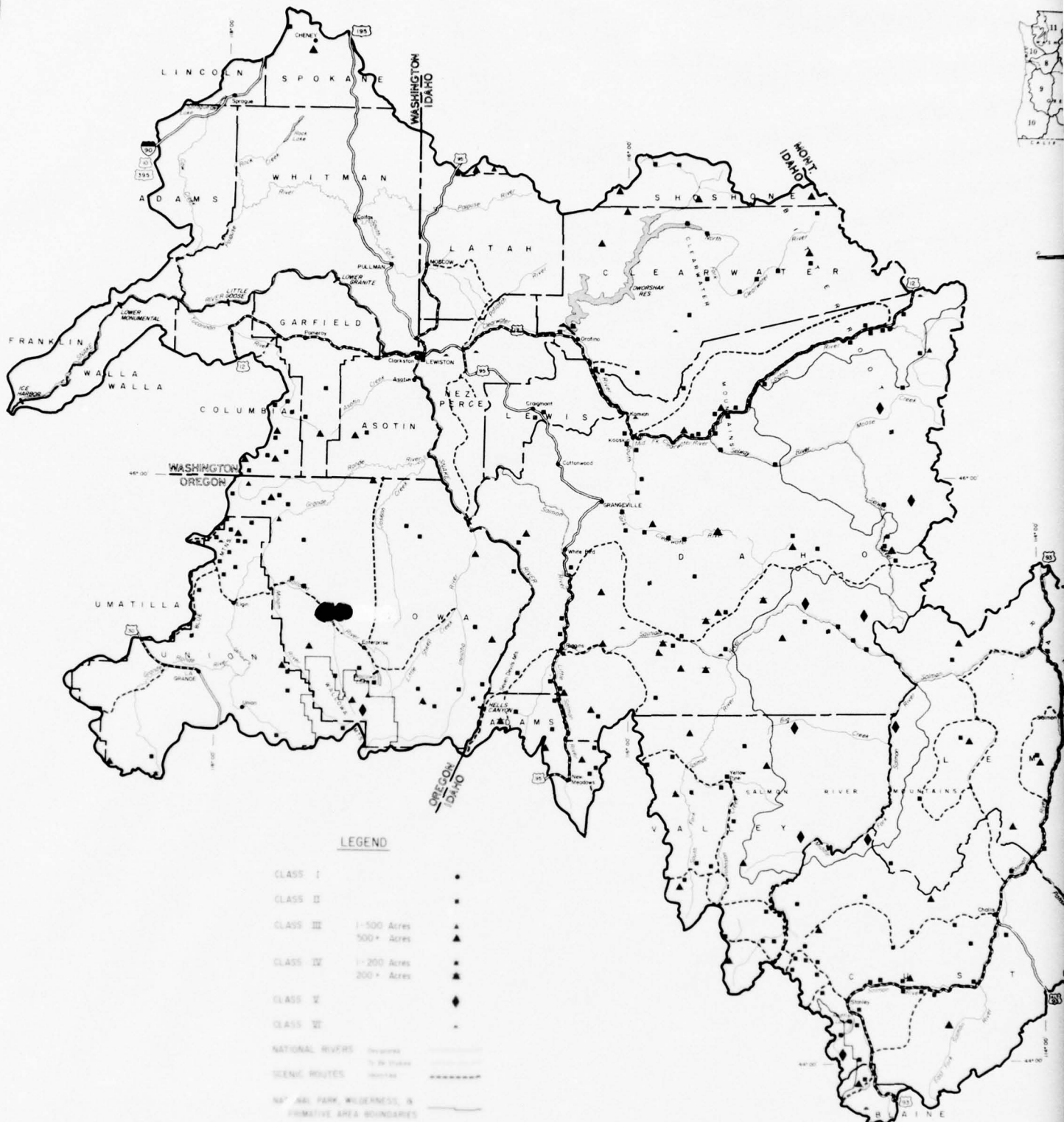
This subregion provides one of the most diverse collections of plants and animals to be found anywhere in the continental United States. Plant species range from arid, near-desert species such as sagebrush, juniper, and cactus to lush forested, moss-covered slopes and high alpine meadows. Some of the most prominent species are Douglas fir, ponderosa pine, western red cedar, spruce, sagebrush, bunch-grass, and snowberry. Many species of game fish and animals are found here, offering the recreationist excellent opportunities for hunting, fishing, and photography.

In the Salmon River drainage alone, there are elk, mountain goats, mountain sheep, mule deer, bear, white-tailed deer, upland birds, waterfowl, trout, and anadromous fish. Areas within this subregion are also well known for elk hunting.

The total population of the subregion in 1965 was 163,300. This represents a little less than 3 percent of the total population of the Columbia-North Pacific Region. Over 90 percent of the population is concentrated in the west and north portions of the subregion.

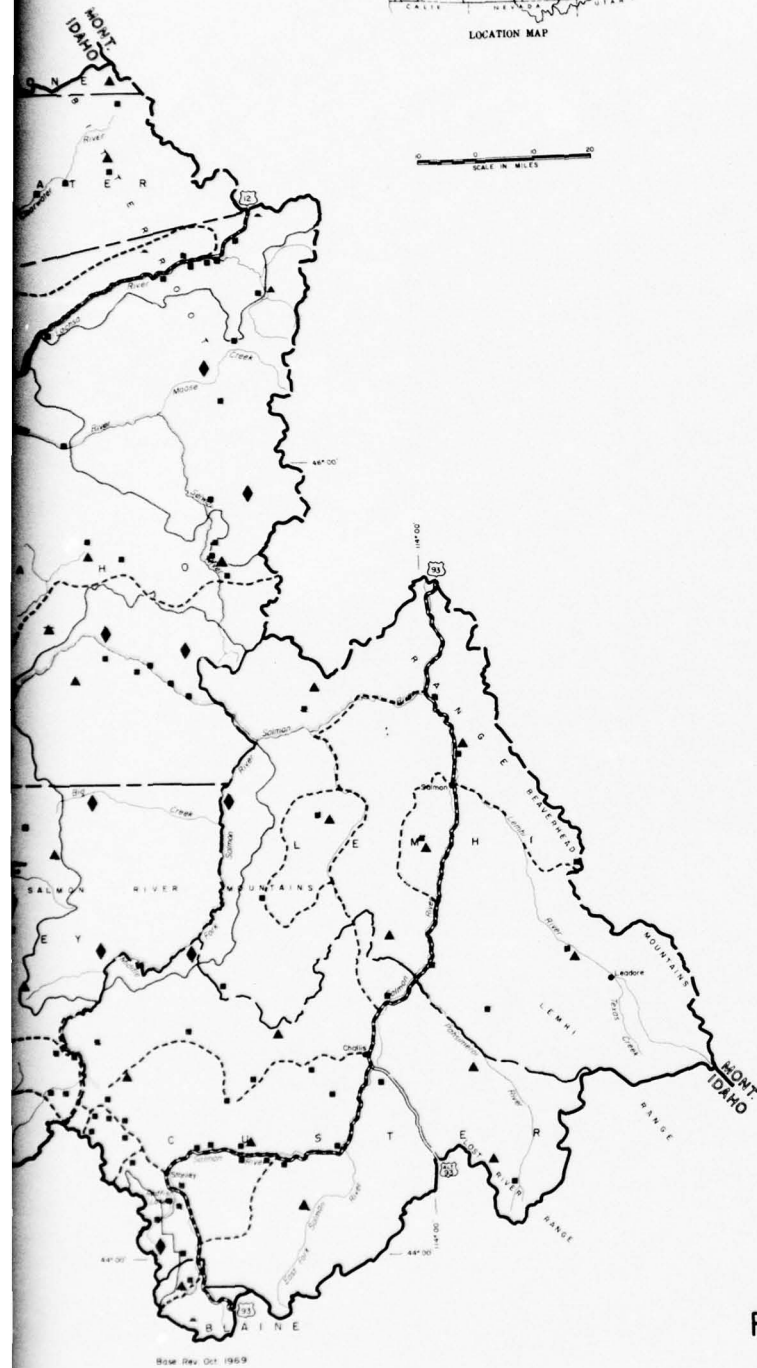
The subregion has a limited road system. Although there are both north-south and east-west highways, many areas are without good roads. There are no through railroads, and only Lewiston has commercial airline service.

Figure 23 shows the location of the existing resources.





LOCATION MAP



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
RECREATION AREAS**
LOWER SNAKE SUBREGION 6

FIGURE 23

Available Outdoor Recreation Resources

Major Recreation Areas

Selway-Bitterroot Wilderness. This is the largest classified area in the wilderness system--almost one million acres lie within the Lower Snake Subregion.

Idaho Primitive Area. Established in 1931, this superlative area just south of the Salmon River contains over a million acres and includes portions of four national forests.



Big Sand Lake. One of the jewel-like lakes in the Selway-Bitterroot Wilderness. (Forest Service Photo)

Salmon River Breaks Primitive Area. Containing 216,000 acres of rugged river breaks along the north side of the Salmon River, this area joins the Idaho Primitive Area to the south.

Sawtooth Primitive Area. Nearly 50,000 acres of this outstanding scenic area are in Subregion 6. Stanley Basin and the Sawtooth Valley provide supporting facilities to the Sawtooth area.

White Cloud Peaks Area. This magnificent area lying east of Sawtooth Valley contains excellent mountain scenery, numerous lakes, and breathtaking views of the Salmon River Country.

Salmon River. The Middle Fork of the Salmon is now part of the Wild and Scenic Rivers system. The 80-mile stretch of the main Salmon, between the end of the North Fork road and the end of Riggins road, is known as the "River of No Return." In this stretch, the river drops 969 feet with many rapids and small waterfalls. It provides some of the finest white water boating in the country.



Excitement runs high on a float trip down the Middle Fork of the Salmon River. Management of adjacent lands will preserve this setting for future generations. (Bureau of Land Management Photo)

Middle Fork of the Clearwater River. This river also has been designated as part of the Wild and Scenic Rivers system.

Hells Canyon-Seven Devils Scenic Area. Comprising 130,000 acres, this area extends for 22 miles along the Snake River, including the section that contains Hells Canyon, the deepest river gorge in North America.



Hells Canyon is the deepest gorge in North America. This is a view looking directly into the Hells Canyon-Seven Devils Scenic Area. Future generations will appreciate preservation efforts put forth today. (Forest Service Photo)

Wenaha Back Country. This remote roadless area of over 105,000 acres containing many miles of trails, fishing streams, and excellent hunting habitat is surrounded by spectacular canyon and mountain scenery.

Eagle Cap Wilderness. Most of this 216,000 acre area, embracing the crest of the Wallowa Mountains, is located in the subregion. It is composed of rugged granitic peaks, steep canyons formed by ancient glaciers, fast flowing streams, and sparkling lakes nestled in high basins.

Lewis and Clark Highway. This is a 133-mile scenic drive along the original route of the Lewis and Clark Expedition. Recreation and interpretive sites enrich the visitor's experience.

Nez Perce National Historical Park. A series of 22 sites scattered over 12,000 square miles of northern Idaho. These sites preserve and interpret the history and culture of the Nez Perce Indians and of the whites who eventually engulfed them.

Table 67 summarizes the major resources for the subregion.

Table 67 - Major Recreation Resources in All Ownerships,
Subregion 6

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	8	59.8	
Lakes and Other Slack Water	11	6.0	
Other Water			
Small		28.6	
Large		14.7	
Total Water Surface		109.1	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	4		257
Study Rivers	7		591
Established Roadless Areas	4	2,382.5	
Established Scenic Roads			1,580

Source: Tables 1, 7, and 8.

Existing Supply

The Federal Government administers over 60 percent of the subregion's 22,371,200 acres of land. Ninety percent of these Federal lands are within the national forest system. Almost all Federal holdings can be classified as natural or primitive areas.

There are almost 8 million acres of private lands in the subregion. Recreation services include guided hunting and fishing trips, winter sport areas, and camping areas. Major Federal water impoundments and development of winter sports areas also have provided some opportunity for private investment, but these developments are limited because of climate, seasonal use, and lack of a well-developed transportation system. Nonprofit organizations such as youth, church, and civic groups contribute significantly to the recreation supply. These groups sponsor conservation programs and operate resident and day camps.

Table 68 lists inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

Table 69 lists reported information on the extent of recreation development. This list includes only those facilities for which information was uniformly available.

Table 69 - Facility Development, Subregion 6

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	1,002	532	9	9	1,552	-	1,552
	Units	1,753	168	105	6	2,032	-	2,032
Trailer	Acres	426	13	5	10	454	-	454
	Units	579	63	5	6	653	419	1,072
Group	Acres	190	-	-	-	190	-	190
Picnicking	Acres	162	610	25	39	836	-	836
	Units	569	705	63	222	1,559	-	1,559
Marinas	Number	5	-	-	1	6	NA	6
	Slips	57	-	-	25	82	NA	82
Winter Sports	Number	2	-	-	-	2	4	6
	Lifts or tows	6	-	-	-	6	9	15
Swimming Beaches (Organized)	Acres	6	13	5	1	25	NA	25
Parks and Playgrounds	Number	2	3	1	25	31	-	31
	Acres	50	13	4	99	166	-	166

Dash (-) not reported

NA - Not Available

Table 68 - Acreage of Inventoried Lands by BOR Classes, Subregion 6, 1964^{1/}

Class	Federal	State	County	City	Private ^{2/}	Total
			(1,000 Acres)			
I				0.26		0.26
II	24.55	1.08	0.02	0.26		25.91
III	10,718.61	89.19	0.07	0.02		10,807.89
IV	455.05	5.45	0.03			460.53
V	2,382.52					2,382.52
VI	35.27	0.01				35.28
Total Classed	13,616.00	95.73	0.12	0.54		13,712.39
Not Classed	98.40	610.17	26.08	8.26	7,915.90	8,658.81
Grand Total ^{3/}	13,714.40	705.90	26.20	8.80	7,915.90	22,371.20

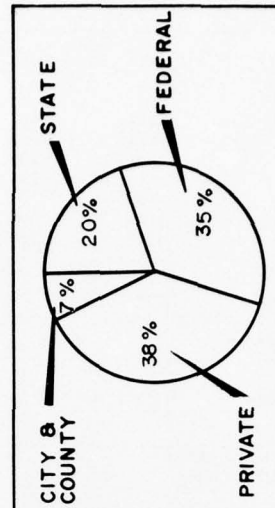
^{1/} BOR classes are defined in the Regional Summary.^{2/} Includes Indian Reservations.^{3/} From Appendix IV, Land and Mineral Resources.

Use of Recreation Resources

Of the total 1965 recreational use inventoried in the Columbia-North Pacific Region, nearly 4 percent took place in the Lower Snake Subregion. Table 70 lists the use for 1965 by agency and activity.

Table 70 - Recreation Use, Subregion 6, 1965

Land Administering Agency	Swim- ming	Water		Picnick- ing (1,000 Recreation Days)	Sight- seeing	Winter Sports	Hunting	Other	Total
		Boating	Skiing						
Forest Service	10	10	5	160	140	590	260	175	1,740
Bureau of Land Management	1	10	5	19	28	132	3	19	468
Bureau of Reclamation									
National Park Service	20	30	5	5	30	60			175
Corps of Engineers									
Bureau of Sport									
Fisheries & Wildlife						4		2	6
Other Federal						1			1
State Agencies	117	35	27	92	291	450	7	25	1,321
County and Municipal	65	7		4	167	33		217	493
Private	73	32	14	95	225	526	200	237	2,591
Total	286	124	56	371	881	1,796	310	866	6,795



Value of Outdoor Recreation and Tourism

The importance of the tourist and recreation industry can be seen in the income attributed to recreation as described in the Bonneville Power Administration study of recreation in the Pacific Northwest. Based on data contained in that study, it is estimated that annual recreation expenditures within the Lower Snake Subregion included \$45 million by tourists and \$22 million by nontourists for a total of \$67 million. These expenditures represent the equivalent of 7,500 employees and add considerably to the economy. In this subregion, as in the entire region, only a small part of the outdoor recreation and tourism potential is utilized.

FUTURE DEMAND

The Lower Snake Subregion's population is expected to increase to 193,000 in 1980 and reach about 275,000 by year 2020. This subregion is expected to have one of the lowest population growth rates in the entire region. Yet, with slightly less than 3 percent of the region's population the Lower Snake Subregion receives almost 4 percent of the recreation use in the region. With improved transportation, existing use is expected to increase substantially in the future. Figure 24 shows the projected recreation demand in this subregion.

The demand for water related activities was further delineated and is shown in table 71. These activities include both those requiring actual water surface, such as swimming, fishing, boating, and water skiing, and those activities that occur on land but are enhanced when located near the water.

Table 71 - Projected Demand, Water Related Recreation, Subregion 6

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	500	550	950	1,750
Water Skiing	201	232	418	782
Swimming	1,482	1,716	3,092	5,781
Fishing	780	953	1,269	1,646
Sightseeing	2,520	2,918	5,256	9,827
Picnicking	1,997	2,312	4,165	7,787
Camping	1,308	1,515	2,728	5,100
Other ^{1/}	1,212	1,404	2,522	4,727
Total	10,000	11,600	20,400	37,400
Recreation Days ^{2/}	4,000	4,600	8,200	15,000

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

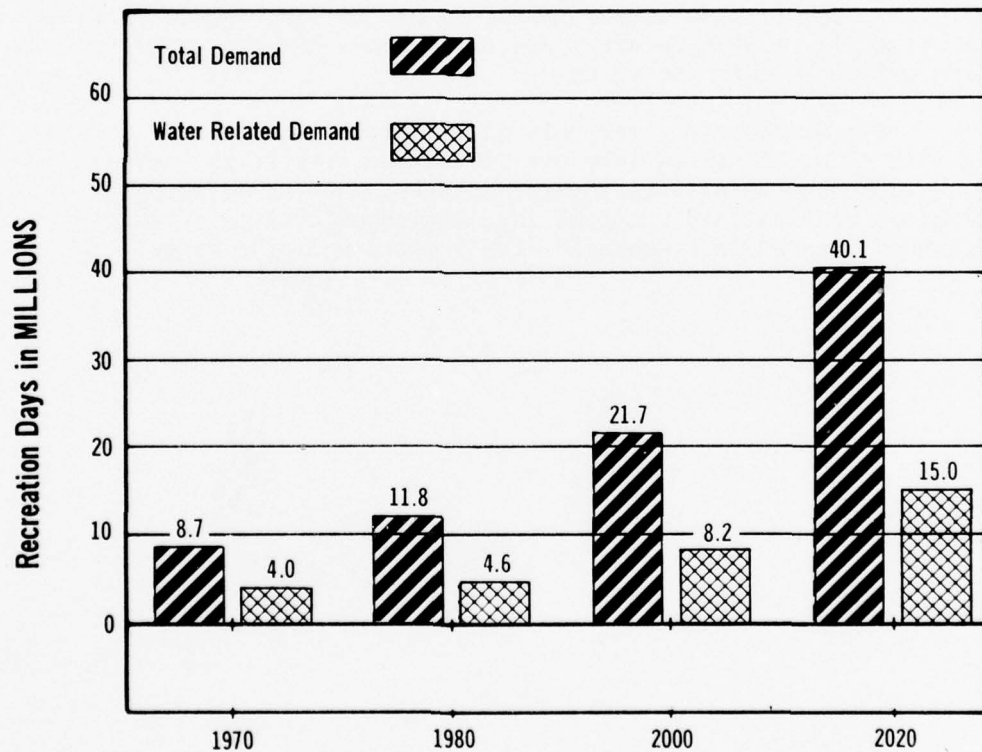


FIGURE 24 Expected Growth of Recreation Demand

Subregion 6

OUTDOOR RECREATION NEEDS

Comparison between projected recreation demand for 1970 (8.7 million recreation days) in the Lower Snake Subregion and the projected 1970 use (7.0 million recreation days) indicates that about 80 percent of the total subregion demand was being met at inventoried resources. Undoubtedly there is a portion of the demand being met at noninventoried resources, but the extent of this use is not known. The capacity of the inventoried public lands and waters is more than adequate to accommodate present and future recreation demands. The development of this potential is presently lagging behind and, at the current rate of development, will become more acute in the future. The need for recreation facility development is shown in figure 25.

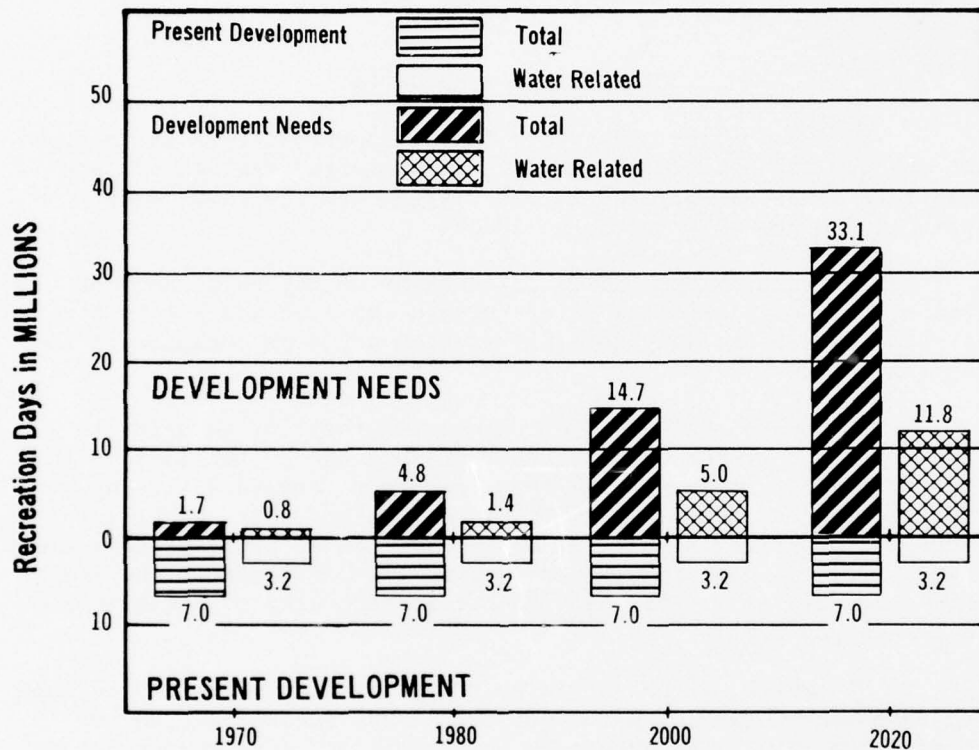


FIGURE 25 Need for Recreation Facility Development

Subregion 6

An analysis, using the entire subregion, does not account for the distribution of the resource. There may be needs for additional land and water when the area of consideration is limited to specific areas within the subregion. This is the case within the day-use zones adjacent to the Lewiston, Pullman, and Moscow areas.

There may also be imbalance between supply and demand when an analysis is made on the basis of the level of government. City and county areas are usually designed to accommodate intensive day use, while the more remote areas under jurisdiction of the Federal and State levels provide for overnight and vacation uses. Studies have shown that about 60 percent of the total demand generated from a population center is for close in day-use areas, while 30 percent is for weekend trips of up to 125 miles. A detailed analysis made on this basis might show a need for additional land and water in some portions of the subregion. Figure 26 is a map showing the location of potential vacation development zones and other features.

MEANS TO SATISFY NEEDS

Protection of Resources

This subregion offers the finest opportunity in the region to enhance the National Wilderness Preservation System. It now has several areas included in the system, and there are many potential areas which could be added.

The Lower Snake Subregion contains nearly 80 percent of the mileage of designated rivers within the Wild and Scenic Rivers System. There are many more miles which could be included in the system.

The Snake, Salmon, Clearwater, and their tributaries in their present free-flowing state represent one of the last of the Nation's great river systems that have been changed little by man. To assure an adequate supply of wilderness and white water for future generations steps should be taken now to preserve this area. Water resource planning should exclude from development the Snake River and all of its tributaries between the city of Lewiston and Hells Canyon Dam.

Elsewhere, steps should be taken now to protect and in some cases enhance existing water quality in the subregion. On the local level it will be necessary for county and city government to develop long-range plans to identify and acquire sufficient land and water resources to complement the recreation development of the subregion. A study of the Lewiston area and local flood plains should be made to determine if zoning and flood proofing might be satisfactory solutions to the flooding problem. Such an approach, by limiting occupancy of the flood plain, leaves the urban river bank areas open to recreation use and reduces the need for additional upstream storage.



LEGEND

DEVELOPMENT ZONES

ROADLESS AREAS

RECREATION RIVERS

SCENIC ROADS

NOTE: Zone boundaries are diagrammatic

Base Rev. Oct. 1969

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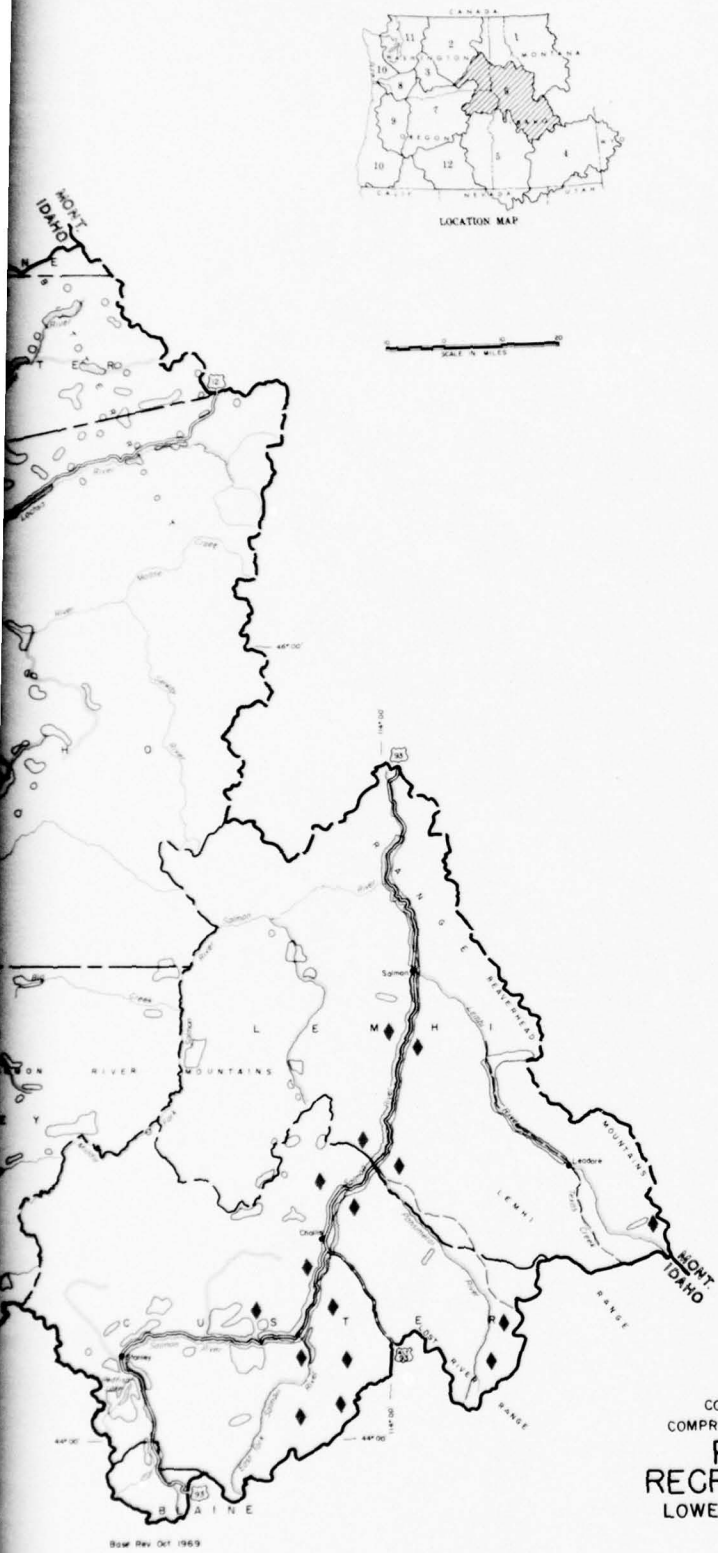


FIGURE 26

Specific studies will be required to determine the location, distribution, and number of historic and archeologic sites and to inventory all natural landmarks and landscape types for the establishment of coordinated cultural and esthetic preservation systems. This region should be given high priority planning for long-term archeological development.

In conclusion, the Lower Snake Subregion has the potential for protecting and preserving some of the finest white-water and free-flowing streams in the region. The withdrawal of these streams from development is one of the primary means to satisfy future recreational needs in the Columbia-North Pacific Region.

Figure 26 is a map showing potential recreation development zones.

To provide the widest range possible for water-based recreation, it is necessary to maintain a balance between free-flowing stream segments and slack water opportunities. Where streams pass through population concentrations, the values for recreation are increased. The Snake River through Lewiston is an example of such a stream. With the extension of slack water navigation to Lewiston, opportunities for water-based recreation are practically unlimited. The development of city parks, marinas, moorage areas, and accompanying developments is of highest priority. Recreation use of the Snake and Salmon Rivers for float trips has been an important outlet for both local and out-of-region residents. The subregion has thousands of miles of stream that are available for both stream-side use such as sightseeing, picnicking, and camping; and water-based activities such as swimming, boating, and fishing. A preliminary list of some of the more important recreation streams is shown on table 72.

Table 72 - Principal Recreation Streams, Subregion 6

Description	Miles	Acres at 320/mile
<u>Components of the National Wild and Scenic River System (P.L. 90-542)</u>		
Clearwater, Middle Fork - from the town of Kooskia upstream to the town of Lowell.	20	6,400
Lochsa River - from its junction with the Selway at Lowell forming the Middle Fork upstream to the Powell Ranger Station.	57	18,240
Selway River - from Lowell upstream to its origin.	90	28,800
Salmon, Middle Fork - from origin to confluence with the main Salmon River.	90	28,800
<u>Rivers Designated for Study in the Wild and Scenic Rivers Act (P.L. 90-542 Sec. 5(a)).</u>		
Salmon - segment from the town of North Fork to its confluence with the Snake River.	212	67,840
<u>Rivers selected for 5(d) status under the Wild and Scenic Rivers Act, P.L. 90-542.</u>		
Snake River - main stem from Lewiston to Hells Canyon Dam.	102	32,640
Grande Ronde River, Oregon - from Rondowa to confluence with Snake River.	99	31,680
Minam River - from origin to confluence with Grande Ronde River.	46	14,720
Imnaha River - origin of south Fork to confluence with Snake River.	71	22,720
Wenaha River - main stem and South Fork from Milk Creek to confluence with the Grande Ronde River, Oregon.	11	3,520
Wallowa River - from Wallowa Lake to confluence with Minam River.	50	16,000
<u>Other</u>		
Grande Ronde River - from Wallowa to Elgin.	17	5,440
Little Salmon River - main stem.	31	9,920
Rapid River - origin to confluence with Little Salmon River.	19	6,080
South Fork - including the East Fork of the South Fork and Johnson Creek.	135	43,200

Table 72, Continued

<u>Description</u>	<u>Miles</u>	<u>Acres at 320/mile</u>
<u>Other (continued)</u>		
Panther Creek - main stem.	39	12,480
North Fork - main stem.	21	6,720
Salmon River - from town of North Fork upstream to origin and	175	56,000
Lemhi River - main stem.	56	17,920
Pahsimeroi River - main stem.	49	15,680
East Fork Salmon - main stem.	35	11,200
Yankee Fork - main stem.	26	8,320
Valley Creek - main stem.	21	6,720
Meadow Creek - origin to confluence with the Selway River.	35	11,200
Lochsa River - from Powell Ranger Station upstream to Selway-Bitterroot Wilderness boundary.	8	2,560
Clearwater River - main stem from Lewiston to Kooskia.	75	24,000
North Fork Clearwater River - main stem above Dworshak Pool.	80	25,600
Little North Fork Clearwater River - origin to confluence with North Fork Clearwater River.	112	35,840
Kelly Creek - origin to confluence with North Fork Clearwater River.	22	7,040
South Fork Clearwater River - main stem.	63	20,160
American River - main stem.	13	4,160
Red River - main stem.	20	6,400
Total Miles Federal Designated Rivers	257	82,240
Total Miles Federal Study Rivers Section 5(a)	212	67,840
Total Miles Section 5(d)	379	121,280
Total Miles Other Rivers	<u>1,052</u>	<u>336,640</u>
Subregion Total Miles and Land Acreage	1,900	608,000

Development of the Resource

There are a few basic needs that will be of high priority and would occur under several of the different alternatives available. The surplus capacity of the subregion could be utilized to accommodate unsatisfied weekend and vacation type recreation use from other subregions.

Table 73 lists the estimated land and water requirements for Subregion 6.

Table 73 - Land and Water Requirements for Water Related Demand Subregion 6

Activity	1970	1980	2000	2020
		(acres)		
Camping and Picnicking				
Land	1,200	1,600	3,000	5,500
Water	2,400	3,200	6,000	11,000
Swimming				
Land	20	25	50	80
Water	60	75	150	240
Boating and Water Skiing				
Land	90	105	190	350
Water	4,300	4,800	8,400	15,400
Shoreside Hiking				
Land	200	300	450	800
Water (not determined)				
Total Land (Rounded)	1,500	2,000	3,700	6,700
Total Water (Rounded)	6,800	8,100	14,600	26,600

Table 74 presents an estimate of the acquisition and development needs by level of administration.

Table 74 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 6

	(1)	(2)	(3)			(4)			(5)		
	Land ^{1/} Inventory BOR I & II	Existing ^{2/} Facility Development	Water Related ^{3/} Development Needs			Land Acquisition Needs			Facility Development Needs		
	(1,000 Acres)		1980	2000	2020	1980	2000	2020	1980	2000	2020
Federal	22.1	1.6	0.6	1.2	2.1	-	-	-	-	-	0.5
State	0.8	0.8	0.6	1.1	2.0	-	0.3	1.2	-	0.3	1.2
County and Municipal	0.2	0.1	0.2	0.3	0.6	-	0.1	0.4	0.1	0.2	0.5
Private	0.1	0.1	0.6	1.1	2.0	-	-	-	0.5	1.0	1.9
Total	23.2	2.6	2.0	3.7	6.7	-	0.4	1.6	0.6	1.5	4.1

1/ Data from table 68 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

2/ Data from table 69 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

3/ Data from figure 25.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water related recreation needs for specific activities:

Swimming

There is more than enough water surface in the subregion to support the existing and projected demand for swimming. However, there will be a need to provide additional access and beach development at nonurban sites. The urban needs can be met primarily by the addition of swimming pools, particularly through city development programs. A total 20 acres of beach will be required by 1970, 25 acres by 1980, 50 acres by 2000, and 80 acres by 2020.

Boating

The following table 75 lists the estimated number of pleasure boats and projections.

Table 75 - Pleasure Boats and Projections, Subregion 6^{1/}

<u>Class</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	4,045	4,530	7,847	14,400
Car Top	694	777	1,346	2,471
Moored	809	906	1,569	2,880
Stored	<u>230</u>	<u>258</u>	<u>446</u>	<u>819</u>
Total	5,778	6,471	11,208	20,570

^{1/} Based on preliminary data from Survey of Boating Needs, State of Idaho, Corps of Engineers, 1969.

On the basis of the above information, the estimated number of boat launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
40	65	115	205

The need for water to operate the boats would include both running water for canoes, prams, kayaks, and rubber rafts; and flat water for fishing, cruising, and water skiing. Additional water access sites will be needed to accommodate the boating demand. A total of 90 acres will be required by 1970, 105 acres by 1980, 190 by year 2000, and 350 by year 2020.

Camping and Picnicking

County and city recreation resources are limited in relation to State and Federal resources. However, a portion of the demand for these activities consists of high intensity day-use opportunities. Thus, one priority is the additional development of day-use areas in the Clarkston-Lewiston area. Private land acquisition may be necessary to fulfill this requirement.

There also will be a need to expand the capacity of the camping and picnicking facilities in the rural areas where most of the land is in Federal ownership. The major need is for sites along through roads and adjacent to the back country. The land requirements to accommodate these activities adjacent to streams, lakes, or reservoirs are estimated to be 1,200 acres in 1970, 1,600 acres by 1980, 3,000 by year 2000, and 5,500 by year 2020.

Hiking

In total, there are sufficient trails on public lands in the subregion to meet future hiking and horseback riding needs. However, the existing trails are often far from the areas of need creating supply-demand locational imbalances. In addition, short trails to disperse wilderness travellers and to provide access to high mountain lakes are needed. Interpretive, nature, and short trails in and adjacent to urban areas also are needed. It is estimated 200 miles of trails will be required by 1970, 300 miles by 1980, 450 by 2000, and 800 miles by 2020.

Driving for Pleasure and Sightseeing

This subregion, as most others, has an excellent supply of scenic roadways. U. S. Highways 12 and 93 offer outstanding scenery for the traveller. There are also many miles of unsurfaced roads; many provide access to historic sites, scenic areas, wilderness thresholds, and general recreation areas. The primary need is to upgrade the system to handle increased recreation loads. Facilities for picnicking, camping, and interpretation should also be provided.

Winter Sports

There are presently six areas with 17 lifts which provide opportunities for skiing within the subregion. However, facility developments within the national forests are basically inadequate. The good snow zones are remote from urban areas and access is poor or nonexistent. There is also a critical need to develop a system of trails for snow vehicles and snow play areas adjacent to population centers.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies. Based on the percentage of water related demand to total recreation demand, there will be a need to accommodate the following:

Table 76 - Water Related Recreation Demand to be Satisfied,
Subregion 6

Item	1970	1980	2000	2020
		(1,000 Recreation Days)		
Total	780	1,880	5,550	12,340
Incremental	780	1,100	3,670	6,790

Table 77 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with the suggested studies.

Table 77 - Development and Study Costs of Recreation Programs,
Subregion 6

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	5,810	14,940	28,220	48,970
Annual OM&R	350	900	1,700	2,950
Study Costs				
Free Flowing Rivers	1,022	-	-	1,022
Roadless Areas	387	-	-	387
Scenic Roads	12	-	-	12
Total	7,581	15,840	29,920	53,341



LOCATION MAP

7 20-000000

SUBREGION 7

MID - COLUMBIA

PRESENT STATUS

The Recreation Setting

The subregion is composed of lands in Oregon and Washington which drain into the Columbia River between Bonneville Dam and the mouth of the Snake River. The major stream systems are the Deschutes, John Day, and Umatilla Rivers in Oregon and the Walla Walla and Klickitat in Washington. Other systems include the Hood River and White Salmon drainages.

Prominent landscape features include the Columbia River Gorge, snow-capped peaks of the Cascade Mountains with year-round glaciers, deep basaltic flows, and desert plateaus. Associated with these features one finds a variety of landscape patterns and ecological associations which range from the prime forest to desert. Such natural resources possess esthetic values of outstanding importance to the overall recreation picture.

Historical resources identified to date center around the exploration and settlement of the Northwest. Lewis and Clark led the 33-man Corps of the Northwest Discovery Expedition down the Columbia in the fall of 1805. During the 1830 missionary movement, Dr. Marcus Whitman established his mission for the American Board in Cayuse County in the Walla Walla Valley. Today this site is known as Whitman Mission National Historic Site. The remnants of the much needed variation of the Oregon Trail provided by Sam Barlow in 1845 may be seen in the White River area of Wasco County, Oregon. As a result of the Cayuse Indian uprisings, Wascopam, later known as Fort Lee, was established and served until 1850 when Fort Dalles Military Reservation was set up. Block houses on either side of the Columbia River at the Cascades provided protection to the settlers. Gold discovery in Canyon Creek brought prospectors to the John Day area, and the establishment of the stage route from Canyon City to The Dalles later to be known as The Dalles-Canyon City Military Wagon Road.

Scientific exploration of the John Day Valley began in 1864 when Thomas Condon, a Congregational minister, moved to The Dalles. He found evidence of a three-toed horse and located plant

and animal fossils which altered the concept of evolution of the region in what is now the John Day Fossil Beds State Park and an outstanding recreation area. The archeology of this subregion is best known in the northern part, adjacent to the Columbia River, where archeological salvage work was carried on in the reservoir areas of The Dalles, John Day, and McNary Dams. The archeological evidence suggests a fairly continuous and often fairly dense and diversified human occupation since about 11,000 B.C. In the southern part of the subregion very little archeological work has been conducted, but most evidence to date suggests that this area, south of the Blue Mountains, was more closely related culturally to the Great Basin cultures to the south. Within the Blue Mountains, in the central part of the subregion, archeological information has come principally from surveys rather than from excavations, so there are no temporal data from this part of the subregion.

The numerous lakes and streams of the subregion provide excellent opportunities for sport fishing, including salmon and steelhead in the northern waterways. Mule deer are distributed throughout the subregion. Elk herds are found along the eastern and western limits and pronghorn antelope along the southeast extremities of the subregion.

Highways, railroads, and commercial and private airfields comprise the transportation system. An important commercial water route has been realized with completion of locks and dams on the Columbia which provide slack water navigation through the subregion.

The summer climate of the subregion is characterized by warm sunny days with cool nights and occasional late afternoon and evening thunderstorms of short duration. The autumn periods are characterized by extended periods of rather dry, sunny days with frequent frosts at night and striking displays of vegetative color during October and November. Winter temperatures over most of the area are mild. Heavy snow packs provide excellent skiing conditions in the Cascades. The same condition drives big game animals to lower elevations, and thus provides opportunities to observe many species of wildlife.

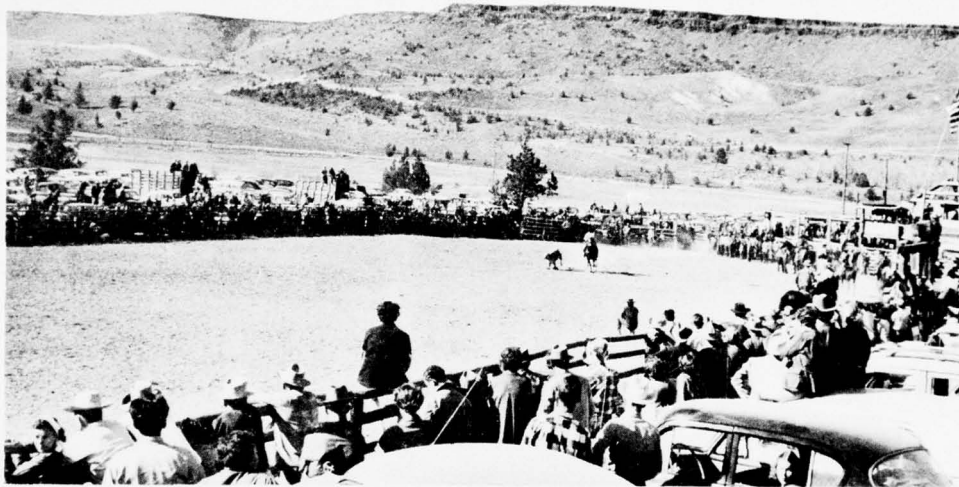
The 1965 resident population was 210,500 (17), 3.7 percent of the regional population. Of this total, 91,000 lived in urban centers, and 119,500 resided on farms or in rural communities.

Available Outdoor Recreation Resources

Major Recreation Areas

Cascade Lakes. A series of high lakes in mountain settings that are becoming increasingly popular for recreation.

Cascade Mountains. These mountains are timber clad on the lower slopes and permanently capped with snow and ice on the higher peaks. The principal peaks in this subregion are Hood, Jefferson, Adams, and The Three Sisters. This mountain range provides recreation opportunities ranging from camping, hiking, hunting, fishing, and mountain climbing in the summer to skiing and other snow sports in the winter months.



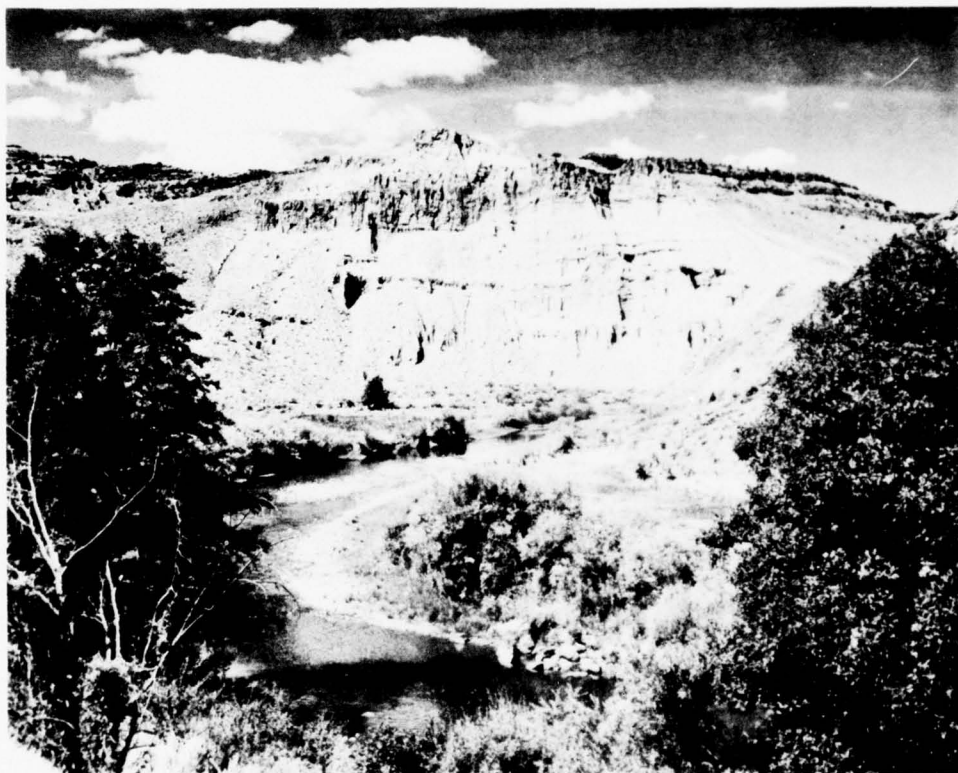
Each spring the Indians at Oregon's Warm Springs Reservation invite their friends to celebrate the digging of the roots. Both the festival ceremonies and accompanying rodeo are free to the public who come from miles around. This scene shows part of the crowd viewing the rodeo arena. (Oregon State Highway Department Photo)

Reservoirs. Numerous reservoirs have been formed, ranging from those located in the high mountain scenery to those located in the sparsely-vegetated lowlands. Most of these reservoirs are very popular. Some of the most popular are Billy Chinook, Simtustus, Crane Prairie, Wickiup, Ochoco, and Prineville.

Lava Caves and Cinder Cones. The southwestern section of the subregion contains the remains of much prehistoric volcanic action that created features of geologic interest. More interesting features include Lava Butte, Lava River Caves, Newberry Crater, and the McKenzie Pass lava flows.

Rivers. The Columbia River and upper gorge area with several of its large dams and reservoirs are located in the northern section of the subregion. Dams include The Dalles, John Day, and McNary. Another very scenic river and one of National significance is Deschutes River.

John Day Fossil Beds. Located in the central portion of this subregion is a world famous deposit of all types of fossil bones.



Cathedral Rock is the name given this intriguing rock formation along Oregon State Highway 19 about 15 miles northwest of Dayville. The John Day River, foreground, parallels the highway much of the way. The Cathedral is part of the famed John Day Fossil Beds. The fluted columns that give it its name vary in color from delicate shades of green and blue to buff and reddish browns. Fossil remains found here are estimated to be more than 30 million years old. (Oregon State Highway Department Photo)

Whitman Mission National Historic Site. Site of the Whitman Massacre in 1847. Located near Walla Walla, Washington, this site contains foundation ruins of the mission buildings, Whitman's dikes and millpond, the Great Grave and a memorial shaft.

Ski Areas. The Cascade and the Blue Mountains provide several very popular ski areas.

Wildernesses. These areas located wholly or partially in the subregion are:

Mt. Adams Wilderness
 Mt. Hood Wilderness
 Mt. Jefferson Wilderness
 Mt. Washington Wilderness
 Three Sisters Wilderness
 Diamond Peak Wilderness
 Strawberry Mountain Wilderness

These seven areas include almost 170,000 acres of roadless back-country, offering opportunities for hiking, fishing, camping, hunting, and mountain climbing.

Rockhounding Areas. There are several outstanding areas of this type in the vicinity of Prineville, Oregon.

Table 78 summarizes the major resources for the subregion.

Table 78 - Major Recreation Resources in all Ownerships, Subregion 7

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	17	149.2	
Lakes and Other Slack Water	15	11.9	
Other Water			
Small		36.4	
Large		8.8	
Total Water Surface		206.3	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	4		398
Established Roadless Areas	7	146.5	
Established Scenic Roads			1,130

Source: Tables 1, 7, and 8.

Existing Supply

Table 79 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

Table 79 - Acreage of Inventoried Lands by BOR Classes, Subregion 7, 1964 ^{1/}

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	-	3/	3/	0.30	-	0.30
II	36.00	25.30	5.00	0.40	-	66.70
III	5,944.90	56.90	0.20	0.50	-	6,002.50
IV	91.40	5.00	-	3/	-	96.40
V	146.50	-	-	-	-	146.50
VI	0.20	0.20	-	3/	-	0.40
Total Classed	6,219.00	87.40	5.20	1.20	-	6,312.80
Not Classed	239.60	312.40	102.30	20.60	11,834.50	12,509.40
Grand Total ^{4/}	6,458.60	399.80	107.50	21.80	11,834.50	18,822.20

^{1/} BOR classes are described in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} Less than 50 acres.

^{4/} From Appendix IV, Land and Mineral Resources

Of the total public recreation land and water in the region, Subregion 7 has almost 7 percent of the land and 7 percent of the fresh water areas available for recreation use. Federal lands, principally national forests and public domain, provide 98 percent of the available area, mostly under multiple use management. About 5.8 million acres of the Federal lands fall in the natural environment classifications. An additional 124,000 acres near urban communities are classified as Type II lands.

In addition to the public lands, land in private ownership provides recreation opportunities. Activities vary from hunting on pasture and timber lands to attendance at dude ranch style complexes for boating, camping, horseback riding, and other pursuits. A large share of the recreational use associated with the private areas utilize nearby public lands, especially where usable bodies of water are present.

This subregion has nearly 12 million acres of private lands. Of these lands, the Soil Conservation Service estimated the 1965 supply available for recreation use to be 148,867 acres with development at that time consisting of 48 campgrounds and 23 picnic

areas. It was also estimated that there are 348 acres of private water surface available for recreation use.

In recent years the development and improvement of recreation facilities by private enterprise has expanded. Notable examples include improvement of resort accommodations on the Indian Reservation near Warm Springs to provide year-round vacation opportunities in conjunction with fishing, hiking, hunting, and rock-hounding, and the private utility developments at Lake Simtustus and Lake Billy Chinook on the Middle Deschutes. The latter involves an improved and expanded State and Federal park complex which replaced the part inundated by the project.

In relation to the rather extensive land areas, facility development, as illustrated in table 80, is minimal. On an average, only one out of 1,400 acres has been developed.

Table 80 - Facility Development, Subregion 7

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	713	568	68	29	1,378	-	1,378
	Units	1,376	377	65	30	1,848	-	1,848
Trailer	Acres	415	21	12	3	451	-	451
	Units	913	123	50	2	1,088	544	1,632
Group	Acres	244	533	-	-	777	-	777
Picnicking	Acres	363	623	96	434	1,516	-	1,516
	Units	1,393	883	215	668	3,159	-	3,159
Marinas	Number	30	-	1	2	33	NA	33
	Slips	308	-	1	1	310	NA	310
Winter Sports	Number	6	-	-	-	-	1	7
	Lifts or Tows	28	-	-	-	-	3	31
Swimming Beaches (Organized)	Acres	17	25	11	-	53	NA	53
Parks and Playgrounds	Number	4	3	4	26	37	-	37
	Acres	12	3	12	191	218	-	218

Dash (-) not reported
NA - Not available

Federal programs have played a significant role in developing the recreation potential on private lands. In the Middle Columbia Subregion, nine applications for development of water impoundment projects under Public Law 566 have emanated from the Soil and Water Conservation Districts. Each of these projects identifies recreation as an important function.

The general location of existing recreation resources is shown in figure 27.

Use of Recreation Resources

Recreation attendance at developed sites in Subregion 7 in 1965 totaled an estimated 9 million visits (not including hunting and fishing), 5.4 percent of that for the entire Columbia-North Pacific Region. Approximately one-fourth of this attendance involved private facilities as estimated from the Chilton Report on Private Outdoor Recreation Enterprises (3). Table 81 lists the reported and estimated visitation to recreation sites in the subregion by agency.

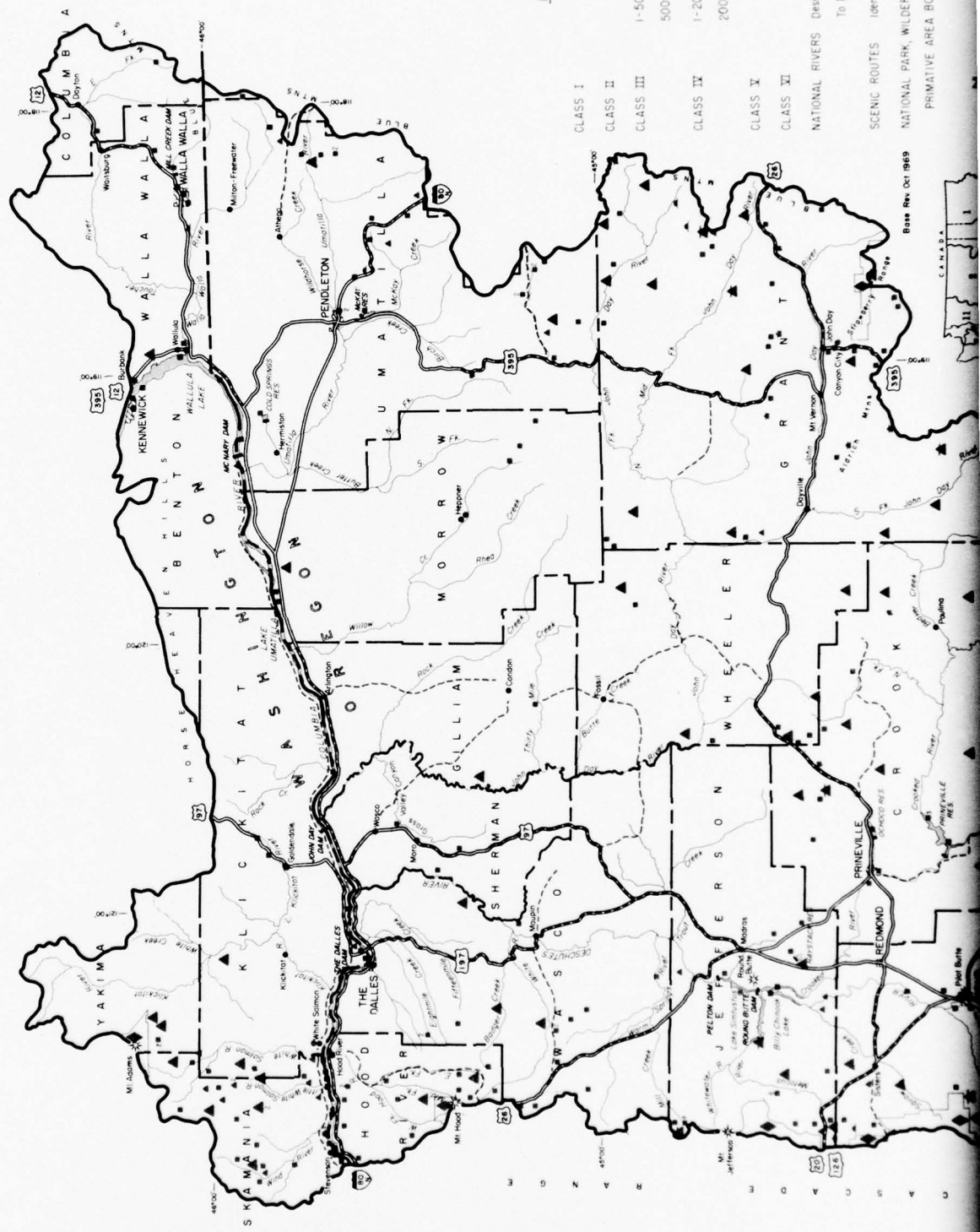
Value of Outdoor Recreation and Tourism

The diverse features of this subregion provide numerous recreation opportunities that presently are only utilized to a minor degree. Although recreational opportunities of the mountains, streams, lakes, lava fields, desert, and forests of this subregion have many opportunities available all seasons of the year, this subregion has not been able to attract the recreationists from the adjacent Willamette Valley in numbers comparable to Subregion 10.

A review of the Bonneville Power Administration study (22) of the recreation industry indicates that recreation expenditures within this subregion include \$44 million by tourists and \$22 million by nontourists for a total of \$66 million. These expenditures represent the equivalent of 7,300 employees and add considerably to the economy.

FUTURE DEMAND

The population of Subregion 7 is expected to increase from 210,500 in 1965 to 404,400 in 2020, an increase of 92 percent over the 55-year period. For the 50-year plan period of 1970 to 2020, water related recreation demand is expected to quadruple. The increase in recreation demand can be attributed to both an increase in leisure time available for recreation activities and an increasing nonresident use of recreation resources in the subregion. The demand for outdoor recreation is expected to be as shown in figure 28.



LEGEND

- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- CLASS VI
- NATIONAL RIVERS
- SCENIC ROUTES
- NATIONAL PARK, WILDERNESS, & PRIMITIVE AREA BOUNDARIES

1-500 Acres
500+ Acres
1-200 Acres
200+ Acres

Designated
To be studied
Identified

Base Rev. Oct 1969

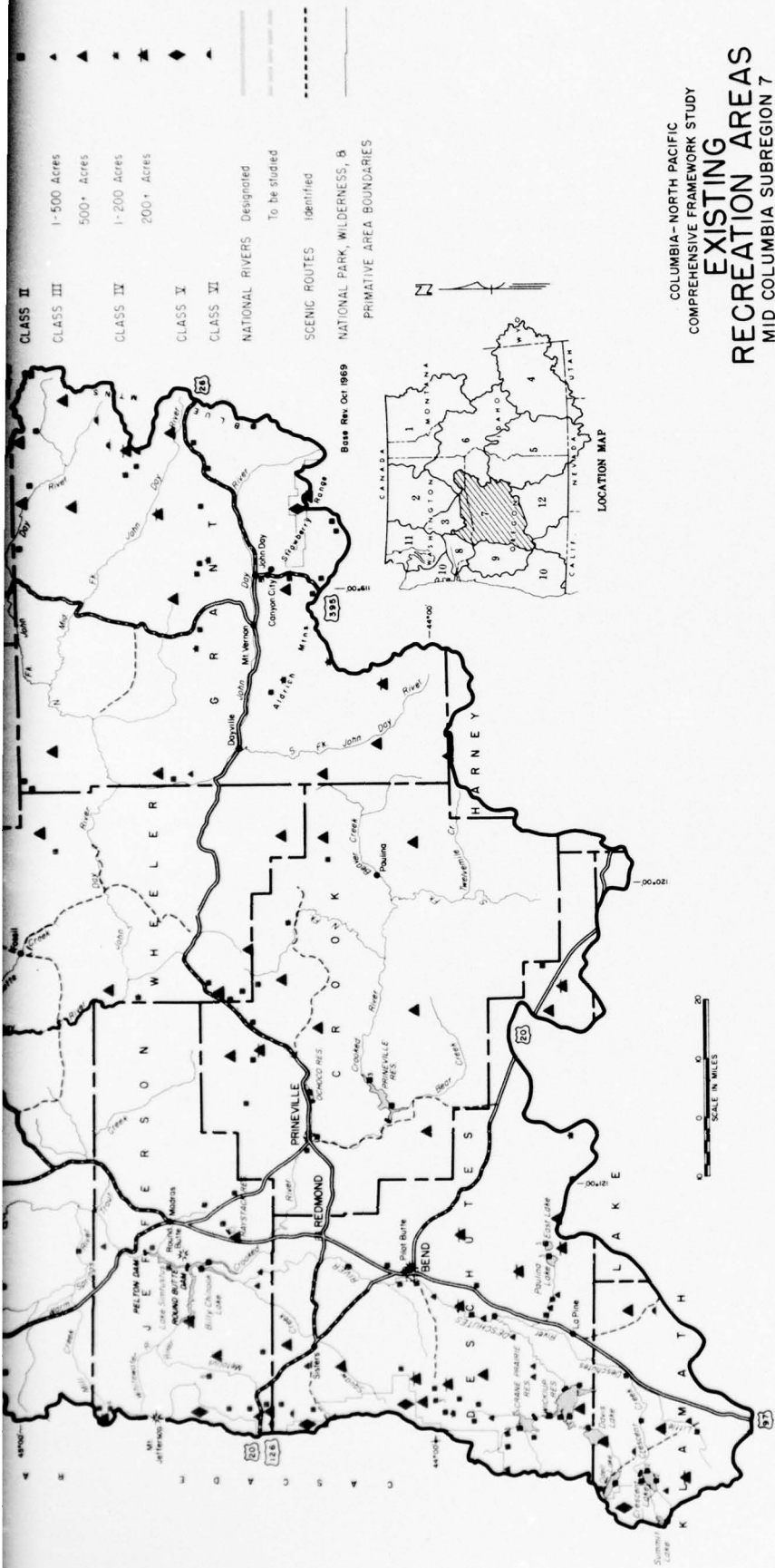
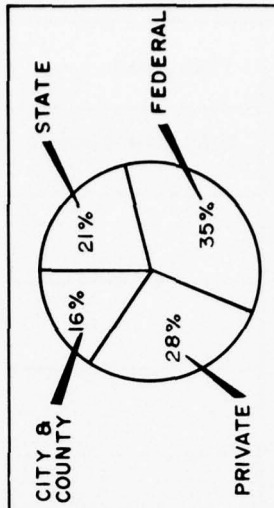


Table 81 - Recreation Use, Subregion 7, 1965

Land Administering Agency	Swim- ming	Boat- ing	Water Skiing	Fishing	Picnick- ing			Sight- seeing	Winter Sports	Hunting	Other	Total
					Camping	(1,000	Recreation Days)					
Forest Service	65	15	5	445	285	280	780	100	220	150	2,345	
Bureau of Land Management	7	15	10	119	40	75	474	3	102	63	908	
Bureau of Reclamation												
National Park Service	20	85	10	45	5	70	155		5	93	93	
Corps of Engineers										15	410	
Bureau of Sport												
Fisheries & Wildlife	1	7	36		12	62			3	4	125	
Other Federal	10	11	1	21	7	1				1	53	
State Agencies	125	47	86	298	201	537	840		27	209	2,370	
County and Municipal	178	45	5	25	32	593	134		5	855	1,872	
Private	136	74	42	58	192	527	831	130	660	490	3,140	
Total	541	293	166	1,047	762	2,095	3,277	233	1,022	1,880	11,316	



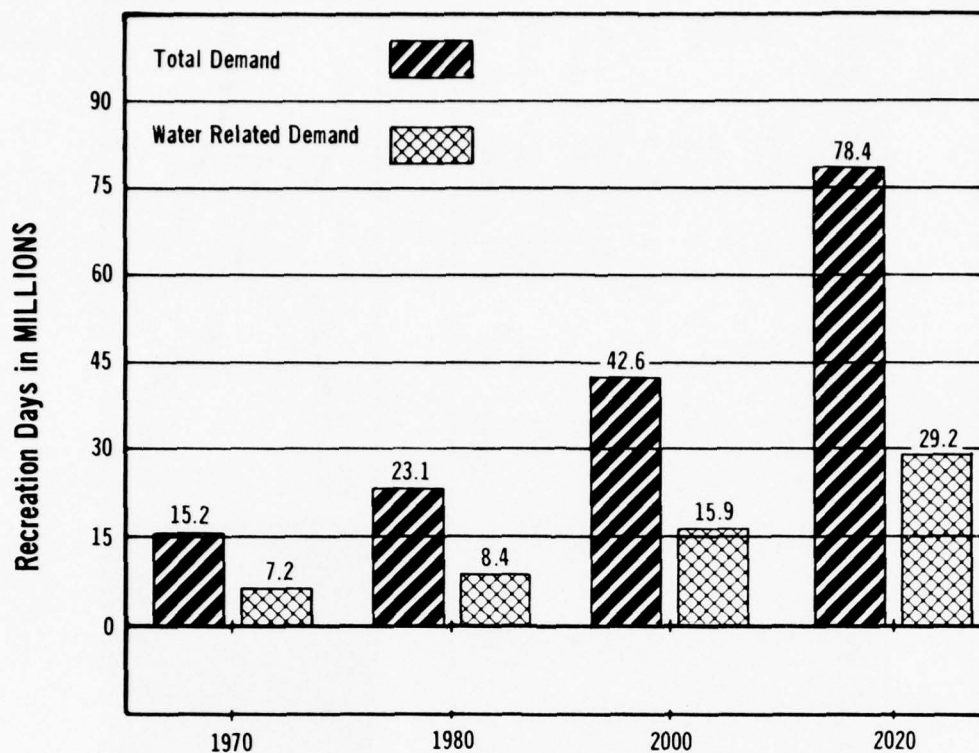


FIGURE 28 Expected Growth of Recreation Demand

Subregion 7

The demand for outdoor recreation in the subregion is about 6 percent of that for the entire region, while the resident population is only 3-1/2 percent of the total.

The attraction of the resources to the population in the Willamette Valley, coupled with the fact that a major east-west interstate highway system passes through the area, are among the chief reasons for the expected nonresident use.

The water related activities include both those requiring actual water surface such as swimming, fishing, boating, and water skiing, in addition to those activities that occur on land but are enhanced when located near the water. Demand for water related activities is shown in table 82.

Table 82 - Projected Demand, Water Related Recreation, Subregion 7

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	1,100	1,250	2,400	4,400
Water Skiing	362	418	816	1,520
Swimming	2,672	3,093	6,030	11,235
Fishing	1,182	1,456	1,927	2,514
Sightseeing	4,542	5,258	10,252	19,099
Picnicking	3,599	4,166	8,123	15,134
Camping	2,358	2,730	5,321	9,912
Other ^{1/}	2,185	2,529	4,931	9,182
Total	18,000	20,900	39,800	73,000
Recreation Days ^{2/}	7,200	8,400	15,900	29,200

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day rounded.

OUTDOOR RECREATION NEEDS

Private recreation resources provide many recreational opportunities throughout this subregion. The type of experiences vary from use of farms and timber lands for hunting activities, to attendance at dude ranch type complexes for camping, horseback riding, fishing, and other similar activities. Much of the recreational use of the private areas takes place in conjunction with adjacent public lands.

Comparison of the 1970 recreation demand for the subregion and the estimated 1970 use indicates that about 60 percent of the total subregion demand will be met at inventoried facilities. Undoubtedly there is a portion of the demand being met at noninventoried facilities, but the extent of this use is not known. The need for recreation land and water development is shown on figure 29.

An analysis, using the entire subregion, does not account for the distribution of the resource and the facility development. There are needs for additional land and water in specific areas of the subregion. This is especially true within the day-use zones of the larger population concentrations and along the major routes of travel. Figure 30 is a map showing potential recreation development. Much of the surface water is in the main stem Columbia River pools where summer heat and dry winds detract from the recreation use.

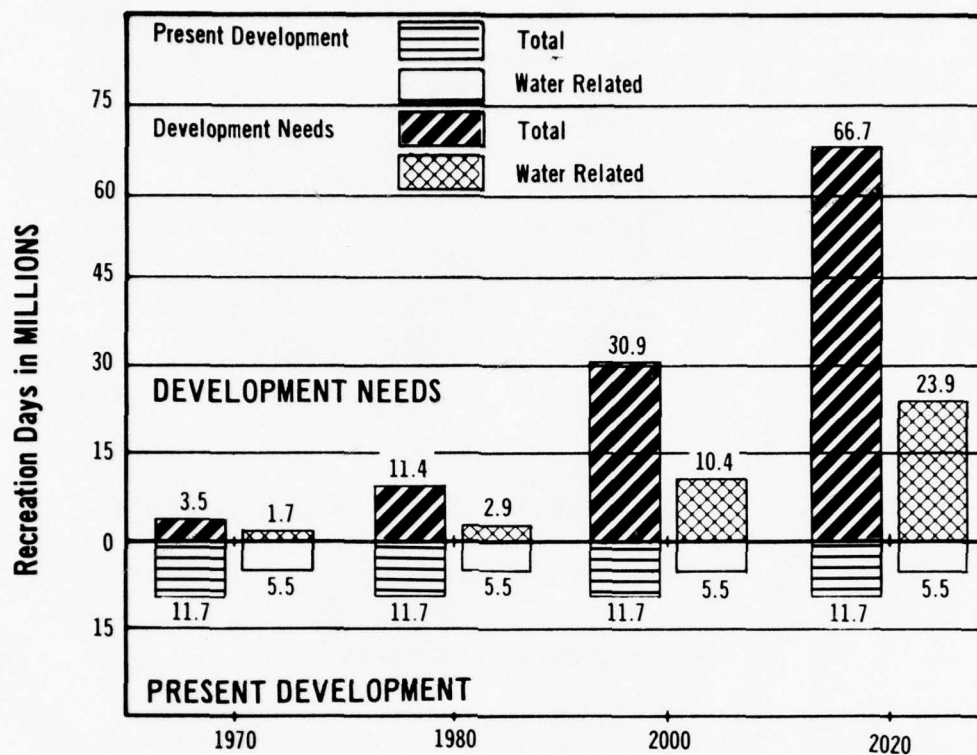


FIGURE 29 Need for Recreation Facility Development

Subregion 7

Climatic relief with associated water-based activities (much sought after in this subregion) may not be readily available to much of the population due to the lack of adequate high elevation recreational lakes. Much of the surface water in the subregion is in the main stem Columbia pools where maximum summer air temperatures over 100°F. and hot dry winds detract from recreation use. Land use adjustments to effect more favorable combinations of water and land which provide climatic relief will be essential. The subregion can be expected to receive both a demand for increased day-use activities from the urban population and extended-use activities from a tourist population. Increased mobility may permit a large increase in day-use activities from an urban population in Subregion 9.

MEANS TO SATISFY NEEDS

Protection of Resources

To assure an adequate supply of lands and water for future use, measures must be initiated to protect and in some cases enhance the quality of the lands and water of the subregion. The local governments must plan for identification and acquisition of sufficient land and water resources to fully cooperate in the recreation development of the subregion. Of particular importance is the protection of the natural setting along the major stream courses. A study of flood plains should be made to determine the need for zoning to protect the environmental and scenic aspects of these important lands.

To provide the widest range possible for water-based recreation, it is necessary to maintain a balance between free-flowing stream segments and slack water opportunities. This subregion has several streams of importance for both streamside use such as sightseeing, picnicking, camping, and for water-based activities such as swimming, boating, fishing, and wading. A preliminary list of these recreation streams is contained in table 83.

Table 83 - Principal Recreation Streams, Subregion 7

Description	Miles	Acres at 320/mile
<u>Rivers selected for 5(d) status under the Wild and Scenic Rivers Act, P.L. 90-542.</u>		
Deschutes River - from Pelton Regulating Dam to confluence with Columbia River.	100	32,000
John Day - mouth to confluence with North Fork.	185	59,200
North Fork John Day - from Kimberly to junction with Baldy Creek.	106	33,920
Granite Creek - mouth to junction with Clear Creek.	7	2,240
<u>Other</u>		
Klickitat River - from origin to confluence with Columbia River.	84	26,880
John Day River - from Kimberly to Dayville.	27	8,640
North Fork John Day River - origin to junc- tion with Baldy Creek.	6	1,920
Deschutes River - free-flowing segments - from origin to Pelton Regulating Reservoir.	120	38,400
Crooked River - from Prineville Reservoir to Lake Billy Chinook.	65	20,800
Little Deschutes River - from Mowich to confluence with Deschutes River.	80	25,600
Metolius - from Camp Sherman to Billy Chinook Lake.	27	8,640
White Salmon River - origin to mouth.	38	12,160
Wind River - origin to mouth.	29	9,280
Total Miles Section 5(d)	398	127,360
Total Miles Other Rivers	476	152,320
Subregion Total Miles and Land Acreage	874	279,680

Augmentation of low flows on several of the above mentioned rivers could substantially enhance their free-flowing character during the summer months. To accomplish this, reservoir storage with summer draw down would be necessary.

Development of the Resource

Table 84 lists the estimated land and water requirements by activity.

Table 84 - Land and Water Requirements for Water Related Demand, Subregion 7

Activity	1970	1980	2000	2020
	(acres)			
Camping and Picnicking				
Land	2,100	3,200	5,800	10,700
Water	4,200	6,400	11,600	21,400
Swimming				
Land	10	20	60	120
Water	30	60	180	360
Boating				
Land	180	210	410	770
Water	9,100	10,200	19,800	35,900
Shoreside Hiking				
Land	400	600	850	1,500
Water (not determined)				
Total Land (Rounded)	2,700	4,000	7,100	13,100
Total Water (Rounded)	13,300	16,700	31,600	57,700

Table 85 presents an estimate of acquisition and development needs by level of administration.

Table 85 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 7

	(1) Land ^{1/}	(2) Existing ^{2/} Inventory Facility BOR I & II Development	(3) Water Related ^{3/} Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	32.4	1.6	1.3	2.4	4.4	-	-	-	-	0.8	2.8
State	16.7	1.2	1.2	2.1	3.9	-	-	-	-	0.9	2.7
County and Municipal	1.2	0.2	0.7	1.2	2.2	-	-	1.0	0.5	1.0	2.0
Private	0.1	0.1	0.8	1.4	2.6	-	-	-	0.7	1.3	2.5
Total	50.4	3.1	4.0	7.1	13.1	-	-	1.0	1.2	4.0	10.0

^{1/} Data from table 79 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{2/} Data from table 80 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{3/} Data from figure 29.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The manner in which water related recreation needs are to be met in terms of specific activities is examined in the following discussion.

Swimming

Sufficient water areas are available to meet future swimming demand, although additional access and beach development needs to be emphasized at nonurban sites. Extending the swimming season to year-round use through the development of heated pools should receive high priority in urban areas.

Swimming requirements for additional lands will be 10 acres by 1970, 20 acres by 1980, 60 acres by 2000, and 120 acres by 2020.

Boating

The growth in numbers of pleasure boats in the subregion by class is listed in table 86.

Table 86 - Pleasure Boats and Projections, Subregion 7

<u>Class</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailerred	8,500	9,500	18,500	33,500
Car Top	1,300	1,500	2,900	5,300
Moored	1,800	2,000	4,000	7,000
Stored	500	550	1,000	2,000
Total	12,100	13,500	26,400	47,800

To facilitate pleasure boat launching requirements, the following number of lanes of boat launching ramps will be required:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
85	95	180	350

Land area needed to meet projected boating needs will be 180 acres by 1970, 210 acres by 1980, 410 acres by 2000, and 770 acres by 2020.

Camping and Picnicking

Land requirements for water-associated camping and picnicking activities are estimated to be 2,100 acres in 1970, 3,200 acres in 1980, 5,800 acres in 2000, and 10,700 acres in 2020.

Hiking

There probably are ample trails on national forest and public domain lands to accommodate the need for hiking and horse-back riding.

Driving for Pleasure and Sightseeing

This subregion has many surfaced and unsurfaced roads of scenic value. The primary needs are to provide supporting facilities for picnicking, camping, and interpretation. Potential scenic roads are shown on the map in figure 30.

Winter Sports

This subregion has the climate and topography suitable for extensive winter sport activities. There are several ski areas that soon will need to be enlarged and new areas will have to be developed. There is also a need to develop a system of trails for snowmobiles and other snow vehicles.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands to accommodate the projected demand, a substantial increase in the budget of the recreation administering agencies will be necessary. Based on the percentage of water related demand to total recreation demand, there will be a need to accommodate the following:

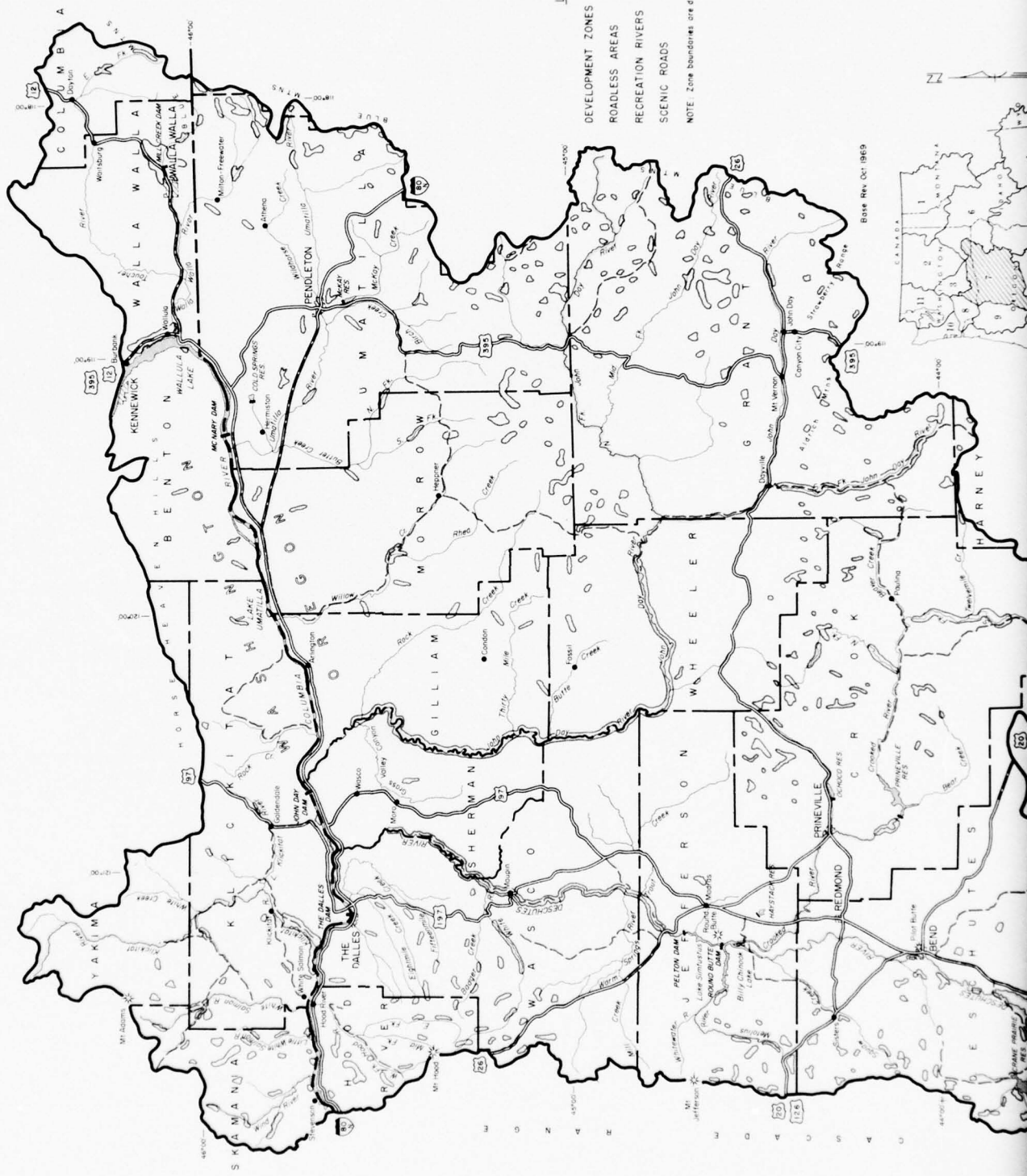
Table 87 - Water Related Recreation Demand to be Satisfied, Subregion 7

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
		(1,000 Recreation Days)		
Total	2,750	4,970	12,380	25,700
Incremental	2,750	2,220	7,410	13,300

Table 88 lists the estimated capital cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day and the cost associated with suggested studies.

Table 88 - Development and Study Costs of Recreation Programs,
Subregion 7

Item	1970-1980	1981-2000 (\$1,000)	2001-2020	Total
Development Costs				
Investment	12,035	31,125	55,195	98,355
Annual OM&R	725	1,875	3,325	5,925
Study Costs				
Free Flowing Rivers	451	-	-	451
Roadless Areas	-	-	-	-
Scenic Roads	24	-	-	24
Total	13,235	33,000	58,520	104,755



LEGEND

- DEVELOPMENT ZONES
- ROADLESS AREAS
- RECREATION RIVERS
- SCENIC ROADS

NOTE: Zone boundaries are diagrammatic

Base Map, Oct. 1969

This is a detailed topographic map of the Harney County area in Oregon. The map shows the following features:

- Towns and Settlements:** Pineville, Beemo, Bend, Harney, and Dayville are labeled.
- Rivers and Waterways:** The Crocker River, Pineville River, and Day River are shown.
- Lakes:** Billy Choate Lake, Pineville Lake, and several smaller lakes are depicted.
- Roads:** Major roads are marked with numbers like 20, 178, and 395.
- Topography:** Contour lines and shaded areas indicate elevation and terrain.
- Location Map:** A small map in the top right corner shows the location of the main map area within the state of Oregon.
- Scale:** A scale bar at the bottom right indicates distances in miles (0 to 20).
- Compass:** A compass rose is located in the top right corner.

2



LOCATION MAP

8 20-000000

SUBREGION 8, LOWER COLUMBIA

PRESENT STATUS

The Recreation Setting

The subregion has an area of 5,103 square miles, all of which is within the State of Washington, except for a small area in Oregon along the Columbia River.

It has a wide variety of topography, ranging from the low rolling mountains of the Coast Range to the rugged and high mountain peaks of the Cascades. The valley in between is an extension of the Willamette Valley in Oregon and the Puget Sound in Washington.

The climate is quite mild with dry and cool summers and wet, cloudy winters. Annual precipitation varies from less than 50 inches in the valley bottoms to more than 100 inches along the windward slopes of the Cascades. Average winter snowfall in the lower valleys is less than 20 inches and in the higher elevations up to 500 inches.

Prominent features supporting general recreation use and at the same time providing esthetic enrichment include the Cascade Mountains, Mount St. Helens, Columbia River, Spirit Lake, Silver Lake, reservoirs on the Lewis and Cowlitz Rivers, Bonneville Dam, Gifford Pinchot and Snoqualmie National Forests, Mount Rainier National Park, the Goat Rocks and Mount Adams Wilderness areas, and a part of the Columbia River Gorge. Other esthetically important elements such as landscape units and ecological associations exist but should receive intensive study to determine those which should be preserved.

The historical resources of the Lower Columbia area emanate from the discovery of the mouth of the Columbia River, development of the fur trade, rivalry between the British and Americans, and the Indian Wars. Lewis and Clark traveling down the Columbia River established a camp at Washougal. In 1818 the first treaty of joint occupancy of the Oregon Country was signed by the United States and Great Britain, and in 1824 Sir George Simpson, Governor of the Hudson's Bay Company and Dr. John McLoughlin established Fort Vancouver on the site of the present Fort Vancouver National Historical site. Cowlitz Mission on the Cowlitz Prairie was started in 1838. At Mary's Corner, the home of John R. Jackson was used as the first Lewis County Courthouse and for the meeting

of the Cowlitz Convention in 1831 to petition Congress to separate the country north of the Columbia from Oregon territory. Vancouver Barracks, established in 1848 adjacent to Fort Vancouver, was an important military post during the Indian Wars of the 1850's. Blockhouses at the upper, middle, and lower Cascades in Skamania County were built for protection during the Indian Wars.

From an archeological point of view, the Lower Columbia Subregion is now and has been traditionally recognized as an area of critical and extraordinary importance in the reconstruction of prehistoric Northwest cultural development. In addition, there were formerly a large number of archeological sites, many of which have yielded enormous collections of artifacts to amateur collectors. In spite of these factors, professional archeologists have paid scant attention to this area, except to reproach themselves for lack of action or wish that certain surveys and excavations were completed and reported. One faint glimmering of hope is the Lower Columbia Archeological Survey now in progress at Portland State University--without funds, progressing excessively slowly, and 20 years too late. In brief, the prehistory of the Columbia River Basin from the Portland vicinity to the Pacific has been dismally neglected and is virtually unknown.

The importance of this area is reflected in both early and contemporary speculations about the relationships between cultures in the interior and those on the coast. Several theories of cultural development have suggested that interior cultures have moved downstream and adapted to coastal environments.

The many streams, lakes, and reservoirs provide fishing for steelhead, trout, and warm water species. Elk, blacktailed deer, bear, and other game species inhabit the area. Details on this appear in the Fish and Wildlife Appendix.

The 1965 population of the Lower Columbia Subregion was 240,100, about 4 percent of the total for the Columbia-North Pacific Region. Nearly one-half of this population is in Clark County, Washington. The pressure for recreation outlets stems largely from the Portland-Vancouver metropolitan area with additional pressure attributable to tourist traffic.

Available Outdoor Recreation Resources

Major Recreation Areas

Major recreation attractions of this subregion include:

Cascade Mountains. The east side of this subregion contains the west slope of this mountain range from Mount Rainier to the Columbia River. The Pacific Crest Trail follows this entire length of the subregion boundary. Other prominent peaks in this part of the Cascades are St. Helens and Adams.

Columbia River. This river forms most of the southern boundary of the subregion. It offers excellent boating, swimming, and water skiing opportunities.

Spirit Lake. This lake is located on the northwest side of Mount St. Helens. It is noted for its beauty and is a highly developed recreation complex, with adjacent rugged forest areas managed for back-country recreation.

Wilderness Areas. Goat Rock Wilderness is located between Mt. Adams and Mt. Rainier; Mt. Adams Wilderness is located on the slopes of Mt. Adams.

Reservoirs. The largest and most significant reservoirs in the subregion are Lake Merwin, Yale Lake, and Swift Creek Reservoir on Lewis River and Mayfield and Davisson Lakes on the Cowlitz River.

Mount Rainier National Park. A portion of this famous park is in the subregion.

Fort Vancouver National Monument. The site of Hudson's Bay Company post. This fort played an important role in the history of the Willamette Valley and the lower Columbia River area.

Beacon Rock State Park on the Columbia River and the John R. Jackson House, south of Chehalis, are of statewide significance. Two of the largest sawmills in the world are located at Longview.

Table 89 summarizes the major resources for the subregion.

Table 89 - Major Recreation Resources in all Ownerships,
Subregion 8

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	5	14.6	
Lakes and Other Slack Water	14	60.5	
Other Water			
Small		26.2	
Large		5.0	
Total Water Surface		106.3	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	-		-
Established Roadless Areas	2	102.2	
Established Scenic Roads			110

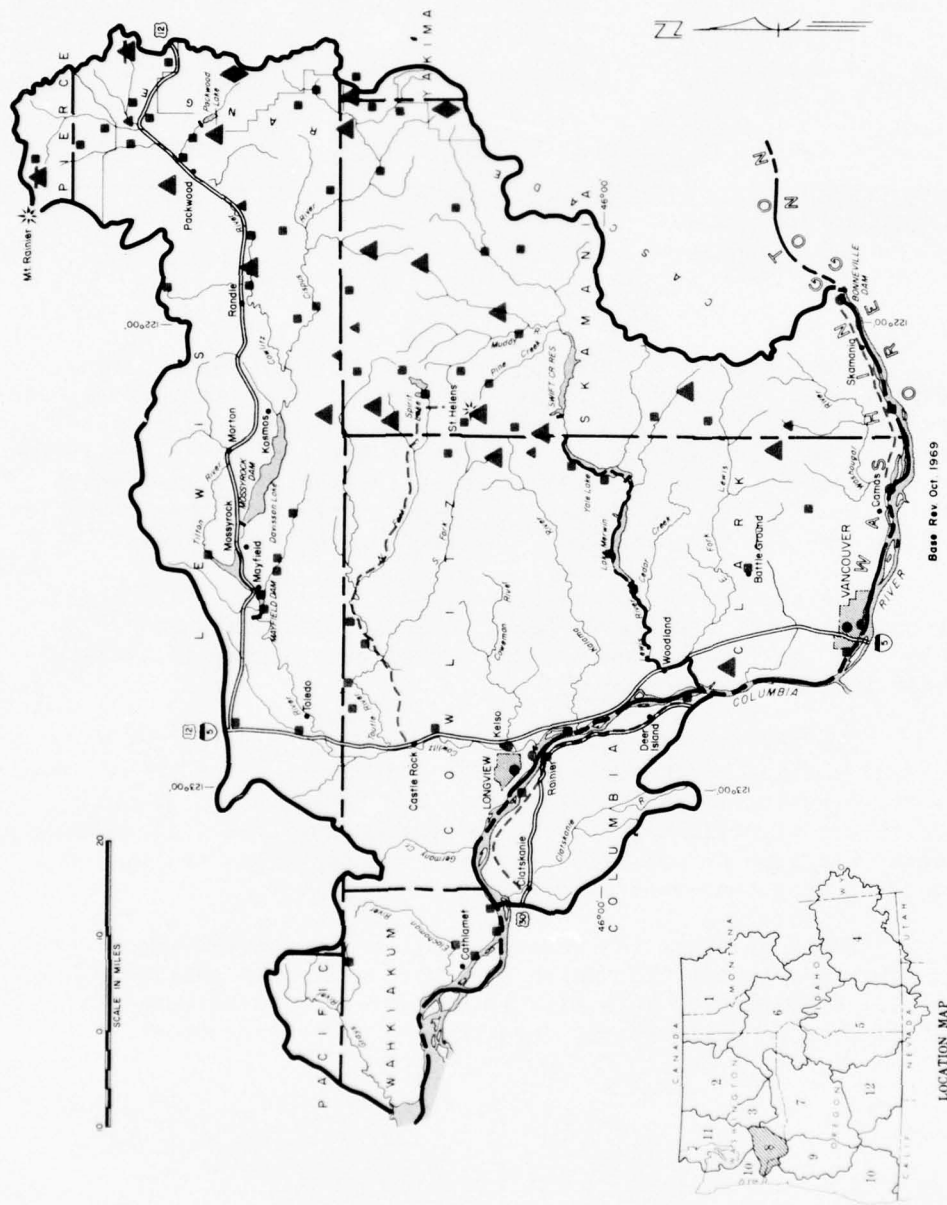
Source: Tables 1, 7, and 8.

Existing Supply

Table 90 lists the acreage of inventoried land within this subregion used for or suitable for recreation. Acreages administered by various levels of government are also shown.

Subregion 8 contains about 2 percent of the region's available recreation lands and nearly 6 percent of its available fresh water surface area. The Federal Government administers about one-third of the subregion's total acreage. The great majority of the land is in national forests located along the west slope of the Cascade Range in the eastern part of the subregion. About a million acres are included in the natural environment (class III) and wilderness (class V) categories. It is possible that some of these lands may be available for development in the future as class II lands. The private forest lands constitute about 1.5 million acres and offer a tremendous potential for outdoor recreation. The five major reservoirs, three on the Lewis River and two on the Cowlitz River, are operated primarily for power production; but these impoundments provide opportunity for outdoor recreation. A total of 14,570 water surface acres in these reservoirs account for about 20 percent of the water surface acreage of the subregion. There are about 110 miles of scenic roadway available in the subregion.

Figure 31 is a map showing the location of the existing recreation resources.



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
EXISTING RECREATION AREAS
LOWER COLUMBIA SUBREGION 8

Table 90 - Acreage of Inventoried Lands by BOR Classes^{1/}
Subregion 8, 1964

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	-	-	0.10	0.10	-	0.20
II	7.00	1.00	0.50	0.20	-	8.70
III	828.00	6.80	0.10	0.10	-	835.00
IV	29.70	N	0.10	N	-	29.80
V	136.90	-	0.30	-	-	137.20
VI	0.10	0.10	-	N	-	0.20
Total Classed	1,001.70	7.90	1.10	0.40	-	1,011.10
Not Classed	1.70	294.30	6.80	14.30	1,864.40	2,181.50
Grand Total ^{3/}	1,003.40	302.20	7.90	14.70	1,864.40	3,192.60

^{1/} BOR classes are defined in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Land and Mineral Resources.

N Less than 1,000.

The subregion's 1,763,600 acres of private lands include agricultural areas, urban areas, timberland, industrial areas, and grazing lands. These lands offer a potential base for a wide range of recreation opportunity. Except for land based facilities in connection with recreation use of private utility reservoirs on the Lewis River and areas developed by private timber companies, hunting and fishing constitute the main use of these lands.

The private sector has invested in motels, hotels, lodges, marinas, and ski resorts in areas where the greatest demand has been. In the future, the private sector is expected to increase these investments considerably.

The forest industry and private power companies maintain a large portion of the privately developed recreation areas. Non-profit organizations such as youth, church, and civic groups contribute significantly to the recreation supply and to conservation programs by operating resident and day camps and by teaching good conservation practices.

Table 91 lists the reported information on the extent of facility development for which data were uniformly available for all subregions. This list is not intended to be complete, but it does demonstrate the magnitude of such development.

Table 91 - Facility Development, Subregion 8

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	432	33	12	10	487	-	487
	Units	884	131	214	50	1,279	-	1,279
Trailer	Acres	10	7	1	-	18	-	18
	Units	20	64	4	-	88	157	245
Group	Acres	56	14	-	-	70	-	70
Picnicking	Acres	57	128	107	64	356	-	356
	Units	228	316	1,091	170	1,805	-	1,805
Marinas	Number	-	6	-	-	6	NA	6
	Slips	-	35	-	-	35	NA	35
Winter Sports	Number	-	-	-	-	-	-	-
	Lifts or Tows	-	-	-	-	-	-	-
Swimming Beaches (Organized)	Acres	1	2	2	7	12	NA	12
Parks and Playgrounds	Number	1	1	4	9	15	-	15
	Acres	1	3	36	65	105	-	105

Dash (-) not reported.

NA - Not Available.

Use of Recreation Resources

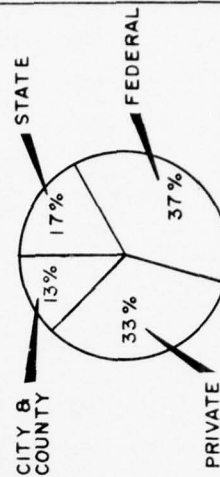
Table 92 lists the reported and calculated visitation to recreation sites within the Lower Columbia Subregion. Visits to private areas were determined on the basis of the Chilton Report, as explained in the Regional Summary. Over 311,000 visits to private utility reservoirs on the Lewis River were reported during 1965. The data on visitation to public administered areas were supplied by the managing agencies as listed. In 1965, the total visitation to areas in Subregion 8 represented about 2 percent of the entire region.

Value of Outdoor Recreation and Tourism

Although recreation and tourism are not considered to be a major industry in this subregion, recreation opportunities are many and varied. The large acreage of forests, interesting mountain peaks, miles of mountain streams, and several reservoirs offer a wide choice of activity. The subregion lies adjacent to the two most populated subregions of the entire region. It has not yet received heavy transient use from these adjacent areas, mainly because of the existence of similar opportunities within each subregion, and probably because it too lacks the influence of a coastal attraction. Most of the current and past use is local. However, as quality experiences decrease in adjacent subregions due to overcrowding or overuse, an increasing influx of nonresident use may be expected to occur in the Lower Columbia area.

Table 92 - Recreation Use, Subregion 8, 1965

Land Administering Agency	Swim- ing	Boat- ing	Water Skiing	Fishing	Picnick- ing		Sight- seeing	Winter Sports	Hunting	Other	Total
					Camping	(1,000 Recreation Days)					
Forest Service	15	5	5	125	55	25	280	15	30	50	600
Bureau of Land Management	4	2	2	22	8	14	90	1	19	12	172
Bureau of Reclamation											
National Park Service											
Corps of Engineers					35	80	683	1		68	867
Bureau of Sport Fisheries & Wildlife											
Other Federal	95	20	14	143	27	127	204		73	45	748
State Agencies	54	18	6	54	17	163	121			139	572
County and Municipal											
Private	51	19	10	335	48	139	478	—	283	103	1,466
Total	200	76	37	679	190	548	1,862	17	405	417	4,431



It is estimated that recreation expenditures and tourism amount to an annual expenditure of \$27 million within the subregion. These expenditures represent the equivalent of about 3,000 employees to accommodate such usage. The above information is based on a study and correlation between the Pacific Northwest Economic Base Study for Power Markets (22) and data contained in table 92, "Recreation Use."

FUTURE DEMAND

The subregion's per capita income and other factors influencing recreation demand are expected to follow regional trends.

The Lower Columbia Subregion, with approximately 4 percent of the present regional population, ranks below the regional average projected growth. Population is expected to increase to 278,000 by 1980, 349,000 by 2000, and 441,000 by the year 2020. Average annual growth rate is 1.1 percent, compared to the regional rate of 1.4 percent. Most of this growth is expected to occur in the urban areas of Vancouver and Longview-Kelso in line with current trends. With 4 percent of the regional population and only about 2 percent of the annual recreation attendance, this subregion has a low per capita recreation use rate. Non-resident recreation use rates, as previously stated, are expected to increase in relation to demand for quality recreation experiences under less-crowded conditions that may occur in other subregions.

Basically, future demand will manifest itself into two broad categories: (1) the demand for water-surface areas for boating, swimming, water skiing, fishing, skindiving, canoeing, and other water related activities; and (2) the demand for land area to support both water-based activity and general outdoor recreation enjoyment. Figure 32 indicates the projected recreation demand for the years 1970, 1980, 2000, and 2020. The projected demand represents about 2 percent of the total recreational demand.

The projected demand for water related activities, both those requiring water surface and those that take place adjacent to the water, are listed in table 93.

Table 93 - Projected Demand, Water Related Recreation,
Subregion 8

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	1,300	2,500	4,800	9,000
Water Skiing	56	96	194	367
Swimming	414	707	1,436	2,715
Fishing	766	944	1,250	1,631
Sightseeing	704	1,200	2,442	4,615
Picnicking	557	952	1,935	3,657
Camping	365	623	1,268	2,395
Other ^{1/}	338	578	1,175	2,220
Total	4,500	7,600	14,500	26,600
Recreation Days ^{2/}	1,800	3,000	5,800	10,600

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

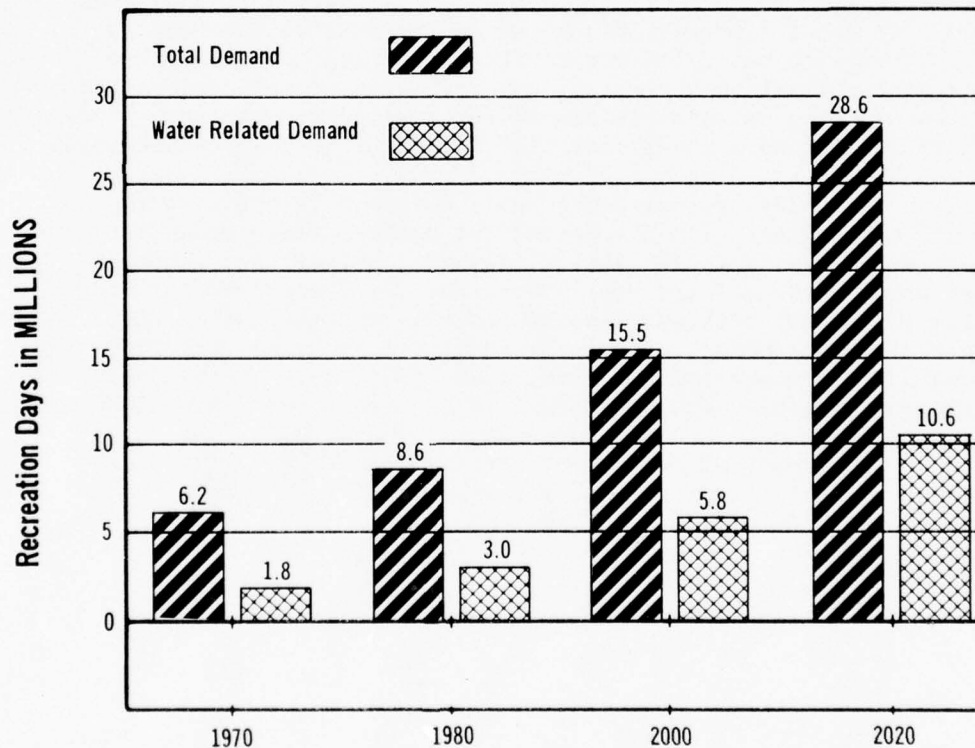


FIGURE 32 Expected Growth of Recreation Demand Subregion 8

OUTDOOR RECREATION NEEDS

Comparison between the 1970 recreation demands (6.2 million recreation days) in the Lower Columbia Subregion and the projected 1970 use (5.1 million recreation days) indicates that a major share of the subregional demand is being met at inventoried facilities. Actually, some of the present use is reported by agencies at sites which were not included in the 1964 inventory. It may be assumed through 1970 that the total demand for recreation facilities is being accommodated by available developments, both inventoried and noninventoried.

Figure 33 illustrates the need for facility development for 1980, 2000, and 2020.

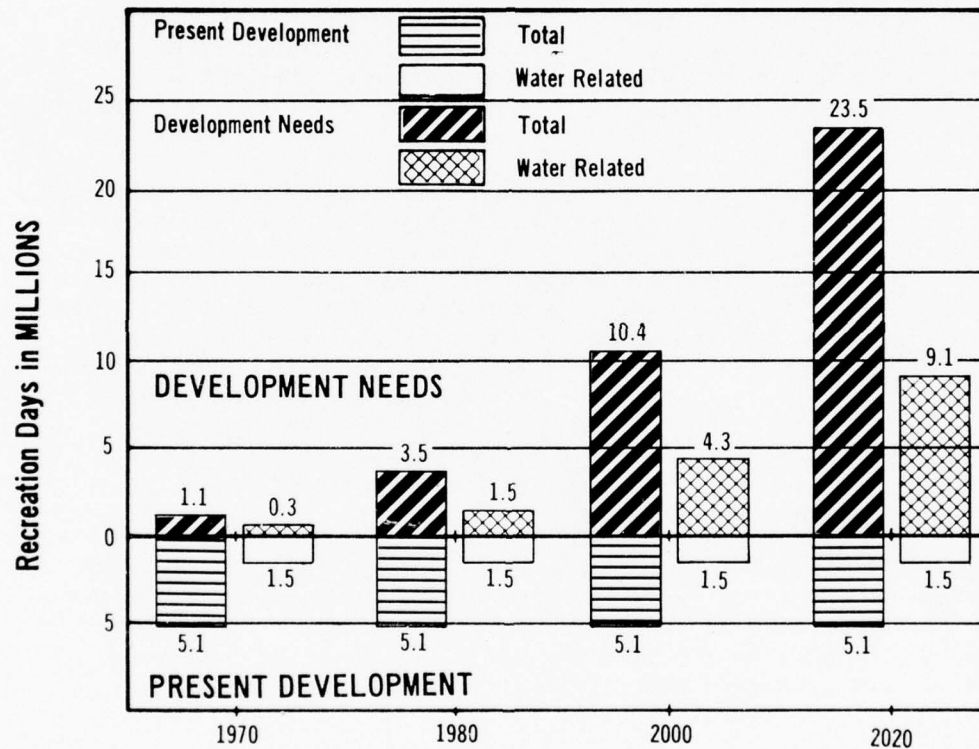


FIGURE 33 Need for Recreation Facility Development

Subregion 8

The private sector could play a very important role in meeting the needs for additional land. Much of the private forest land is currently being utilized for hunting and fishing activities. There is also a potential for private development near the population concentrations that could make up a substantial portion of the indicated deficit.

MEANS TO SATISFY NEEDS

Protection of Resources

To assure an adequate supply of lands and water for future use, steps should be taken now to initiate measures to protect and in some cases enhance the quality of the waters of the subregion. A more detailed study of the recreation potential of the supply should be made to determine how much of the deficit should be met by the local government, the private sector, and the State and Federal land managing agencies. Undoubtedly, there are programs that can be undertaken to increase the capacity of the resource.

Water is the focal point and major element of recreational opportunity. To provide the widest range possible for water-based recreation, a balance should be maintained between free flowing stream segments and slack water opportunities. The Columbia, Lewis, and Cowlitz Rivers offer both water types. The subregion has many miles of stream that are available for both streamside use such as sightseeing, picnicking, and camping, and water-based activities such as swimming, boating, and fishing. Table 94 contains a preliminary list of principal recreation streams. If these streams can be maintained in their current state, it will offer a reasonable balance for recreation use. These streams are shown on figure 34.

A program to systematically evaluate the archeological sites in the Lower Columbia is needed to preserve and salvage whatever is left of the archeological materials. Every effort should be made to see that the small percentage of surviving sites are preserved and intelligently treated.

Table 94 - Principal Recreation Streams, Subregion 8

Description	Miles	Acres at 320/mile
Kalama River - from its source to its confluence with the Columbia River.	36	11,520
Toutle River - from the junction of the North and South Forks to its confluence with the Cowlitz River.	16	5,120
North Fork Toutle River - from origin at Spirit Lake to its confluence with the South Fork.	32	10,240
South Fork Toutle River - from origin to its confluence with the North Fork.	22	7,040
Washougal River - origin to mouth.	24	7,680
Lewis River - Merwin Dam to confluence with Columbia River.	19	6,080
East Fork of Lewis River - origin to confluence with Lewis River.	32	10,240
Cowlitz River - free-flowing segments from origin to mouth.	93	29,760
Cispus River - origin to confluence with Cowlitz River.	42	13,440
Elochoman River - origin to confluence with the Columbia River.	16	5,120
Columbia River - Bonneville Dam to Vancouver Interstate Bridge.	39	12,480
Subregion Total Miles and Land Acreage	371	118,720

Development of the Resource

Table 95 lists the estimated land and water requirements by activity.

Table 95 - Land and Water Requirements for Water Related Demand, Subregion 8

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking				
Land	900	1,150	2,100	3,900
Water	1,800	2,300	4,200	7,800
Swimming				
Land	10	20	30	60
Water	30	60	90	180
Boating and Water Skiing				
Land	225	430	830	1,540
Water	11,800	22,300	43,000	79,600
Shoreside Hiking				
Land	150	200	300	550
Water (not determined)				
Total Land (Rounded)	1,300	1,800	3,300	6,100
Total Water (Rounded)	13,600	24,700	47,300	87,600

Table 96 presents an estimate of the acquisition and development needs by level of administration.

Table 96 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 8

	(1) Land ^{1/} Inventory BOR I & II	(2) Existing ^{2/} Facility Development	(3) Water Related ^{3/} Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	6.3	0.5	0.5	0.8	1.5	-	-	-	-	0.3	1.0
State	0.7	0.1	0.5	1.0	1.9	-	0.3	1.2	0.4	0.9	1.8
County and Municipal	0.2	0.1	0.4	0.7	1.2	0.2	0.5	1.0	0.3	0.6	1.1
Private	0.1	0.1	0.4	0.8	1.5	-	-	-	0.3	0.7	1.4
Total	7.3	0.8	1.8	3.3	6.1	0.2	0.8	2.2	1.0	2.5	5.3

^{1/} Data from table 90 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{2/} Data from table 91 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{3/} Data from figure 33.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water related recreation needs as viewed from specific activities.

Figure 34 is a map showing the location of potential recreation development zones, scenic roads, and recreation rivers.

Swimming

There is more than enough water surface area in the subregion to support the future demand for swimming. However, there will be a need to provide additional access and beach development at non-urban sites. The urban needs can best be met by development of additional swimming pool areas, particularly by city development programs. A total of 10 acres of developed beach will be required by 1970, 20 acres by 1980, 30 acres by 2000, and 60 acres by year 2020 to accommodate the demand for nonpool swimming.

Boating

Estimates of the number of pleasure boats in Subregion 8 and projections of future numbers are given in table 97. A large amount of the recreational boating in this subregion is on the navigable waterways, principally the Columbia River, so requirements to accommodate such use are covered in the Navigation Appendix.

Table 97 - Pleasure Boats and Projections, Subregion 8^{1/}

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailerred	11,014	20,816	40,175	74,324
Car Top	1,101	2,081	4,016	7,430
Moored	2,990	5,651	10,906	20,174
Stored	<u>629</u>	<u>1,189</u>	<u>2,295</u>	<u>4,246</u>
Total	15,734	29,737	57,392	106,174

^{1/} Based on preliminary data from Survey of Boating Needs, State of Washington, Walla Walla District, Corps of Engineers, 1969.



FIGURE 34

On the basis of the projections in table 97, the estimated number of lanes of boat launching ramps required to accommodate the pleasure boats using the nonnavigable waterways would be as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
110	208	401	743

Associated with the launching ramps will be shoreline developments, the acreage of which is listed below. In addition, water--free flowing and still--will be required for operation of all types of water crafts. The availability of various types of water will influence the different kinds of water craft, although a balance of both is best.

The need for water and land to support the general boating and water skiing activities for the target dates is as follows: 1970 - 225 acres of land and 11,800 acres of water, 1980 - 430 acres of land and 22,300 acres of water, year 2000 - 830 acres of land and 43,000 acres of water, year 2020 - 1,540 acres of land and 79,600 acres of water. The needs are for developed land and available water surface. Additional access should be provided to the existing water bodies in addition to any new water developments.

Camping and Picnicking

There will be a continued need to expand the capacity of camping and picnicking facilities through the development of new sites and expansion of existing ones. The land requirements to accommodate these activities, which are primarily adjacent to water, are estimated to be 900 acres by 1970, increasing to 3,900 by the year 2020. Since the major demand is near urban areas, private land may have to be acquired to provide these facilities if private interests do not undertake such developments. Lands required at some distance from urban centers can readily be provided on existing public land.

Hiking

There are enough trails to satisfy projected needs already existing in the subregion. However, new trails are needed to provide access to some of the presently inaccessible areas of the Cascades where there exists prime recreational potentials. Interpretative or nature walks and short trails adjacent to urban areas are also needed. Projections indicate 150 miles should be developed by 1970, 200 miles by 1980, 300 miles by 2000, and 550 miles by 2020. Most trails are enhanced if located near water.

Driving for Pleasure and Sightseeing

There are many existing highway routes that provide an excellent supply of scenic roadways. The major need is to identify these routes. Great potential for this type of use is available in the national forest lands in the Cascade Range.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, lands, and programs to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies and investment of private capital. Based on the percentage of water related demand to total recreation demand, there will be need to accommodate the demand shown in table 98.

Table 98 - Water Related Recreation Demand to be Satisfied,
Subregion 8

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
		(1,000 Recreation Days)		
Total	330	1,220	3,850	8,700
Incremental	330	890	2,630	4,850

Table 99 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with the suggested studies.

Table 99 - Development and Study Costs of Recreation Programs,
Subregion 8

<u>Item</u>	<u>1970-1980</u>	<u>1981-2000</u>	<u>2001-2020</u>	<u>Total</u>
		(\$1,000)		
Development Costs				
Investment	6,225	11,620	19,920	37,765
Annual OM&R	375	700	1,200	2,275
Study Costs				
Free Flowing Rivers	381	-	-	381
Roadless Areas	41	-	-	41
Scenic Roads	10	-	-	10
Total	7,032	12,320	21,120	40,472



LOCATION MAP

20-6770000

SUBREGION 9 - WILLAMETTE^{1/}

PRESENT STATUS

The Recreation Setting

The varied physical features of this subregion provide abundant opportunity for outdoor recreation. Mountains rim the subregion on three sides. The Cascade Range on the east, the Coast Range on the west, and the Calapooya Mountains on the south. At the base of the mountains lies the Willamette Valley, a broad, irregular alluvial plain about 130 miles long and up to 50 miles wide. The meandering Willamette River and its tributaries drain the valley and empty into the Columbia River, the northern boundary. Other water features include the Sandy River, small Columbia River tributaries, large reservoirs, and mountain lakes.

The vegetative cover ranges from the croplands in the valley to lush green forests and the alpine regions of the uplands. The ecological associations within these units produce patterns of irreplaceable esthetic and scientific value which may be lost through alterations to the landscape. Public understanding and appreciation of these values has brought about increased participation in recreation activities oriented toward resources with these values. There is need for intensive studies to identify, classify, and develop plans for preservation and enhancement of these natural environmental elements.

The Willamette Basin was the first region in the Pacific to be colonized in the westward expansion. McLoughlin House, Champoege State Park, Minthorn House, Barlow Trail, and other presently marked, preserved, or developed sites trace the history of the area since 1792. Development of such historical interpretive themes as exploration, government, settlement, and development would add much to the overall enjoyment of this segment of the cultural recreation resources of the subregion.

^{1/} In the Type 2 Willamette Basin Study, based on earlier data, methodology and population projections were somewhat different from those developed in the C-NP Study. Consequently study results are not the same. Significant differences are included for comparison by footnote in this subregional narrative.

Excavations at Cascadia Cave produced evidence that man may have lived there as early as 6,000 B.C., and two other excavations suggest the formative stages of mound development around 3,000 B.C. Although hundreds of sites are known to exist in this subregion, only a small part of the area has been surveyed. Many sites have already been destroyed by land leveling, farming, irrigation, and flood control projects, construction, and various building activities. Since this is the most densely populated area of the state, archeological resources will probably be depleted here first.

The fish and wildlife resources furnish opportunities for fishing, hunting and other recreation. Anadromous fish--salmon and steelhead--account for thousands of days of fishing use, while blacktail deer, pheasant, and waterfowl support hunting. Details on these resources appear in the Fish and Wildlife Appendix.

The climate is one of dry, moderately warm summers and wet, mild winters. Generally, winter precipitation occurs as rain in the valley and as snow in the mountains.

An excellent highway system, five major railroads, and several airlines provide rapid transportation in and out of the subregion. The Columbia and Willamette Rivers provide a navigation link between Portland and the Pacific Ocean.

The 1960 population of this subregion was 1,168,900.(17) About 70 percent of the Oregon population reside in this area. Most of the people live in the urban areas along the Willamette River from Portland to Eugene. The greatest pressures for recreational outlets in the state emanate from this strip.

Timber harvest and the manufacture of lumber and wood products dominate industry, followed by agriculture and recreation, which is expanding rapidly. An estimated 950,000 tourists annually, in addition to recreationists from within the subregion, contribute to the economy.

Outdoor recreation and tourism have increased substantially during recent years. State parks use in the subregion has increased from about 500,000 visits in 1950 to 1,830,000 in 1964. The growth of pleasure boating has also shown a spectacular rise in the last 5 years in the Willamette Subregion counties. Registered craft increased from 20,400 in 1960 to almost 50,000 in 1967.

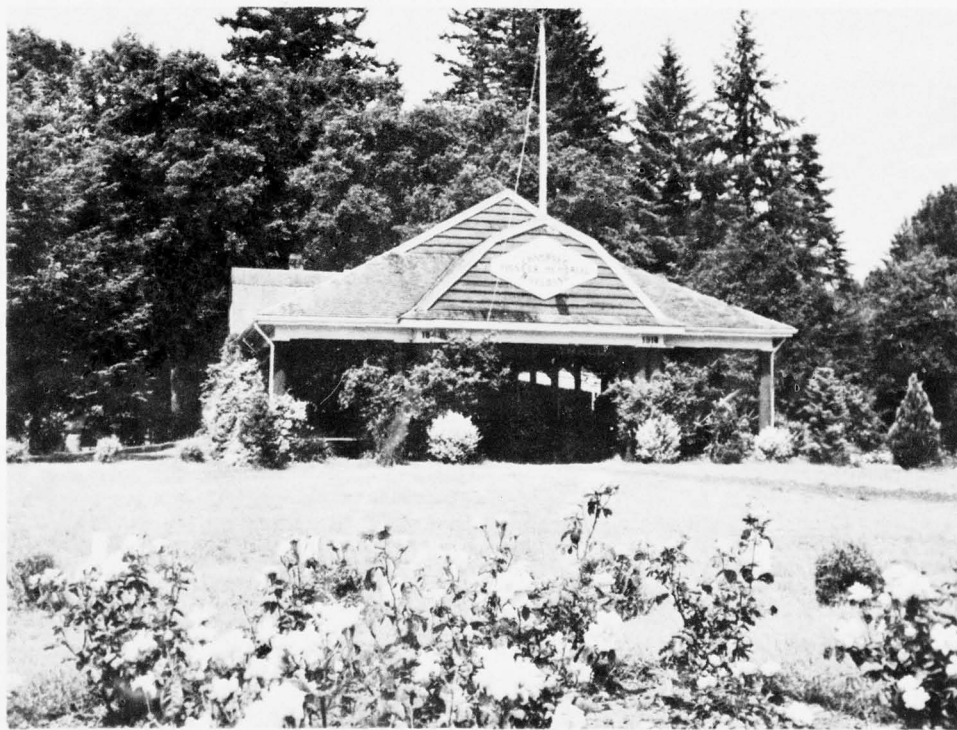
Available Outdoor Recreation Resources

Major Recreation Areas

The Mount Hood Recreation Area. Located a short distance from the Portland metropolitan center, this area receives heavy use both summer and winter. Timberline Lodge and private investments have contributed significantly to developments to date in addition to the Federal expenditures.

The Columbia Gorge Area. This popular area is located east of Portland and is connected by an interstate highway. It contains several Federal and State parks and many scenic waterfalls such as Multnomah.

Federal recreation sites. There are numerous Federal campgrounds, picnic grounds, and other recreation developments in the subregion. Many of these are located adjacent to water bodies.



Champoeg State Park near Salem marks the spot where the historic vote of 1843 was taken to determine whether the Oregon country would become part of the British Empire or of the United States. (Oregon State Highway Department Photo)

State Parks. A total of 35 state parks, covering 12,000 acres, play a significant role in providing recreation opportunity for both residents and nonresidents. Parks such as Silver Falls, Champoeg, Armitage, and Detroit Lake are well known.

Municipal Parks. Most of the larger cities in the subregion have an excellent system of city and neighborhood parks. The city of Portland's Forest Park is an excellent example of planning for the future.

Wilderness and Special Areas. The Willamette Subregion contains all or portions of the following wildernesses: Diamond Peak, Mt. Hood, Jefferson, Mt. Washington, and Three Sisters, with a total of over 260,000 acres in the subregion. In addition, other classified special areas are under jurisdiction of the Forest Service: Little Crater, Rebel Rock, and the Lower Mountain Geological Areas; Yankee Mountain Scenic Area, Waldo Lake Recreation Area, and Quaking Aspen Swamp Botanical Area are some.



Mt. Hood, the highest point in the subregion, is recognized as one of the Northwest's finest and most popular skiing areas. (Oregon State Highway Department Photo)

Historical Areas. The rich heritage of the local pioneers has been preserved in several of the areas of the subregion such as Champoege, McLoughlin House, Barlow Trail, Fort Yamhill Blockhouse, and the old Willamette Military Road.

Recreation Waters. The subregion contains an abundant supply of water suitable for recreation; however, the distribution of reservoirs and lakes in relation to the population is not optimum. Both the Willamette and Columbia Rivers are ideally located, but problems of pollution, development, and access have limited their use. Most of the reservoirs are located in the upper and middle parts of the subregion and on the east side of the Willamette River. Most of the natural lakes lie in the Cascade Mountains.

Table 100 summarizes the major resources for the subregion and figure 35 is a map showing the location of the major recreation sites.

Table 100 - Major Recreation Resources in All Ownerships,
Subregion 9

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	19	35.7	
Lakes and Other Slack Water	12	53.4	
Other Water			
Small		72.4	
Large		17.3	
Total Water Surface		178.8	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	-		-
Established Roadless Areas	5	266.2	
Established Scenic Roads			350

Source: Tables 1, 7, and 8.

Table 101 lists the acreage of public lands used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

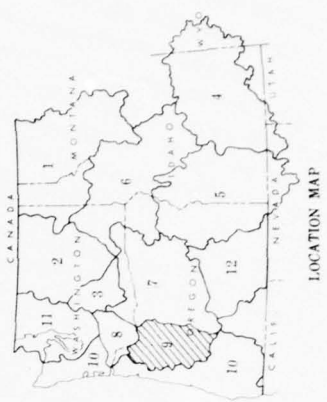
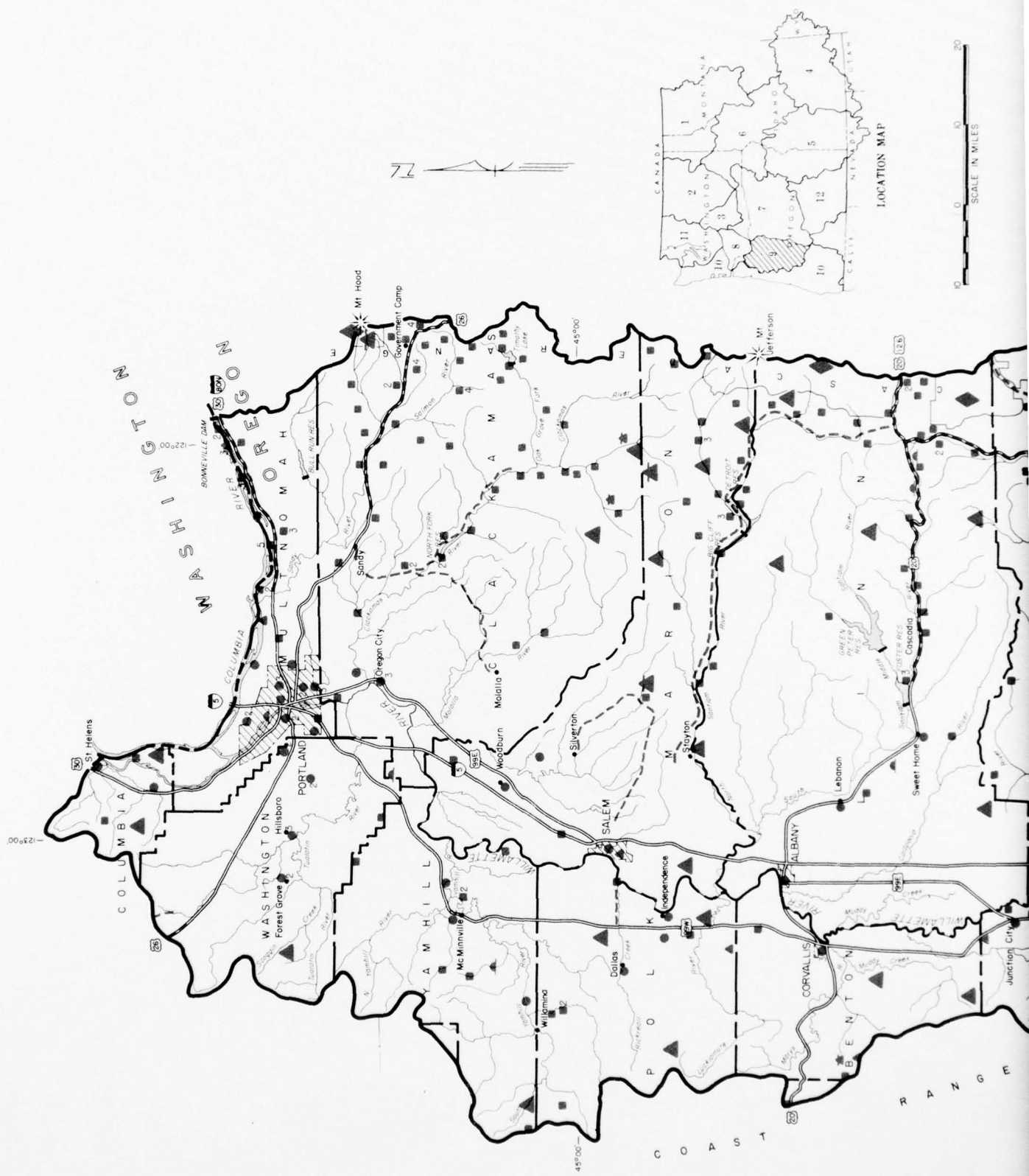
Table 101 - Acreage of Inventoried Lands by BOR Classes, Subregion 9, 1964^{1/}

Class	Federal	State	County	City	Private ^{2/}	Total
			(1,000 Acres)			
I	0.30	0.83	0.20	1.92	-	3.25
II	63.88	2.90	1.77	2.80	-	71.35
III	2,451.55	126.04	1.66	6.27	-	2,585.52
IV	106.47	0.52	0.25	0.01	-	107.25
V	266.21	-	-	-	-	266.21
VI	0.13	0.16	-	-	-	0.29
Total						
Classed	2,888.54	103.45	3.88	11.00	-	3,033.87
Not						
Classed	46.86	93.15	28.52	61.80	4,338.60	4,568.93
Grand						
Total ^{3/}	2,935.40	223.60	32.40	72.80	4,338.60	7,602.80

^{1/} BOR classes are described in the Regional Summary.^{2/} Includes Indian Reservation.^{3/} From Appendix IV, Land and Mineral Resources.

The Willamette Subregion contains about 3 percent of the land and 6 percent of the fresh water area available for recreational use in the region.

In 1960, there were about 2.7 acres of public lands per capita within the subregion. A large percentage of the public lands classified for recreation use are under multiple-use management by the Forest Service and the Bureau of Land Management. The Willamette contains a total of 2.8 million acres of land in this category. The recreation use on these lands is primarily hunting, fishing, hiking, and gathering forest products. About 5,000 acres are contained in more developed areas such as State and local parks, Federal campgrounds and picnic areas, and boat access sites. The extent of developed recreation facilities and land is shown in table 102.





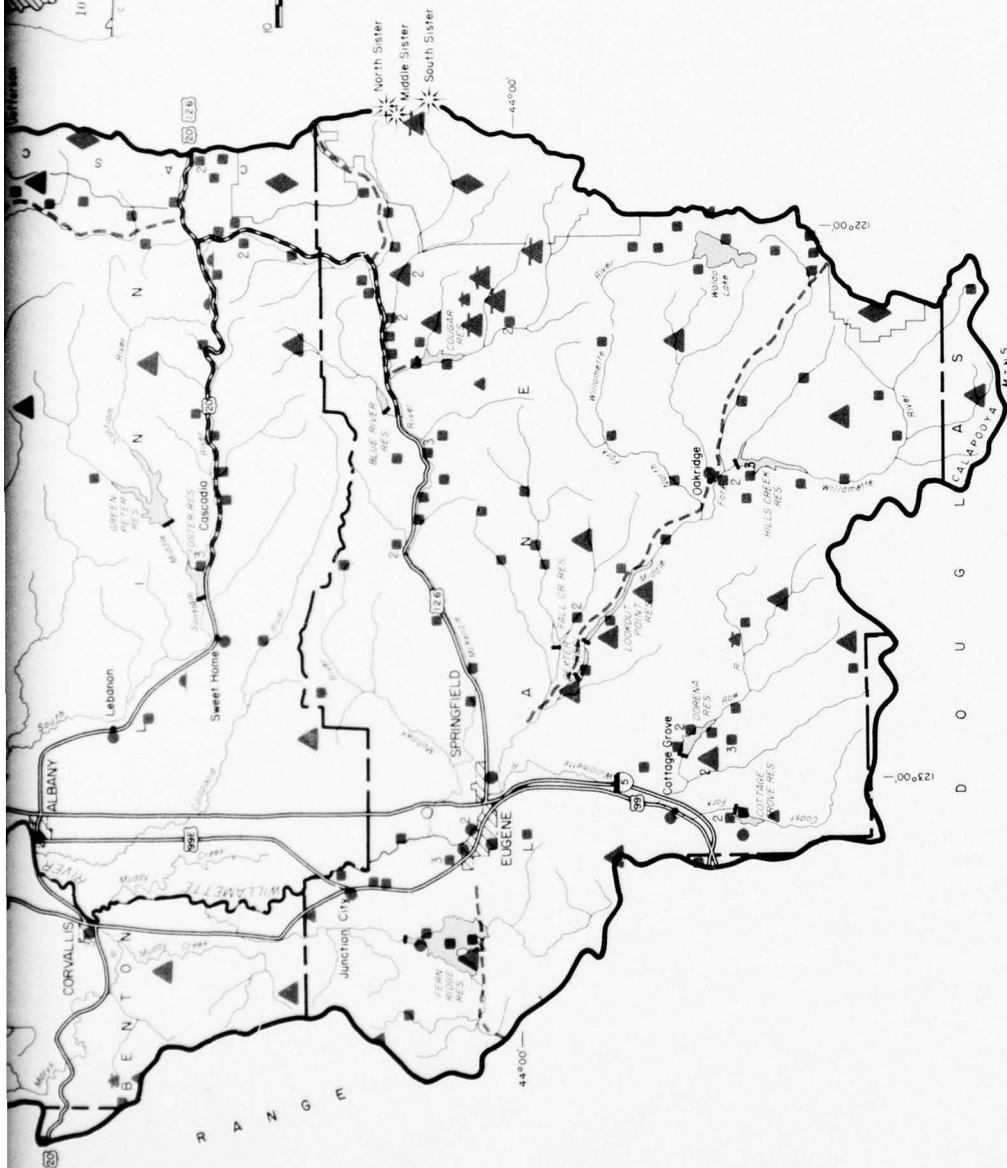
LOCATION MAP



LEGEND

- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- CLASS VI
- 1-500 Acres
- 500+ Acres
- 1-200 Acres
- 200+ Acres

- NATIONAL RIVERS Designated
- To be studied
- SCENIC ROUTES Identified
- NATIONAL PARK, WILDERNESS, &
- PRIMITIVE AREA BOUNDARIES



Base Rev. Oct. 1969

COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
EXISTING RECREATION AREAS
WILLAMETTE SUBREGION 9

Table 102 - Facility Development, Subregion 9

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	807	37	37	-	881	-	881
	Units	1,489	305	144	-	1,938	-	1,938
Trailer	Acres	122	11	39	10	182	-	182
	Units	217	9	15	13	254	530	784
Group	Acres	129	186	25	31	371	-	371
Picnicking	Acres	728	340	227	545	1,840	-	1,840
	Units	1,020	1,603	2,973	3,280	8,876	-	8,876
Marinas	Number	19	1	-	2	22	NA	22
	Slips	317	1	-	1	319	NA	319
Winter Sports	Number	4	-	-	-	-	1	5
	Lifts or Tows	32	-	-	-	-	2	34
Swimming Beaches (Organized)	Acres	26	42	8	3	79	NA	79
Parks and Playgrounds	Number	2	2	15	83	102	-	102
	Acres	7	23	56	563	649	-	649

Dash (-) not reported.
NA - Not Available.

This subregion has over 4 million acres of private land. Information concerning the existing private outdoor recreation areas and facilities is lacking. A recent survey (10) conducted by the National Association of Soil Conservation Districts reveals that there are over 200 private enterprises that involve outdoor recreation activities in the subregion. Such enterprises include golf courses, ski resorts, fishing and hunting areas, campgrounds, picnic sites, amusement parks, historic areas, and swimming ponds. Many sites also include marinas, boat rentals, and docks.

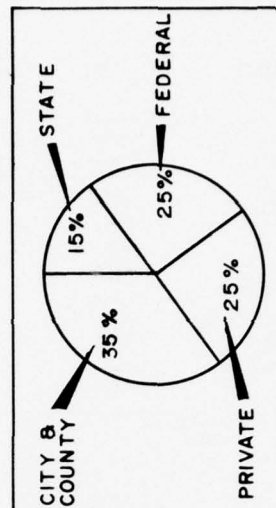
The subregion has 19 reservoirs having 5,000 acre-feet of capacity or more that contain a total of 35,706 surface acres. These reservoirs, mostly located in the upper part of the basin, offer excellent water related recreation opportunities. Some of the municipal water supply reservoirs are not open to recreation use. Both public and private funds developed these impoundments. There are 178,800 acres of water surface in the basin.

Use of Recreation Resources

Table 103 lists the reported and calculated visitation to recreation sites in the Willamette Subregion. Based on estimates made by the Chilton Report on Private Outdoor Recreation Enterprises, visits to the private sector constitute about 25 percent of the total 1965 visitation. Total visitation reported for the Willamette Subregion in 1965 represented about 17.5 percent of the regional total and indicates the influence of the population concentration in the Portland-Salem-Eugene areas on the excellent nearby recreation resources. About 20 percent of the regional sightseeing was reported for the Willamette Subregion.

Table 103 - Recreation Use, Subregion 9, 1965

Land Administering Agency	Swim- ming	Boat- ing	Water		Camping	Picnicking (1,000 Recreation Days)	Sight- seeing (Days)	Winter Sports	Hunting	Other	Total
			Skiing	Fishing							
Forest Service	65	70	40	400	265	450	2,030	500	135	105	4,060
Bureau of Land Management	15	31	15	226	76	143	900	5	195	121	1,727
Bureau of Reclamation	-	-	-	-	-	-	-	-	-	-	-
National Park Service	-	-	-	-	-	-	-	-	-	-	-
Corps of Engineers	60	85	15	145	5	85	1,690	-	5	-	2,090
Bureau of Sport Fisheries & Wildlife	-	-	-	-	-	-	1	-	2	6	9
Other Federal	-	-	-	-	-	-	1	-	-	-	1
State Agencies	438	73	142	90	287	957	2,166	-	17	296	4,466
County and Municipal	949	245	37	38	241	3,317	1,348	-	35	4,613	10,823
Private	506	167	83	95	290	1,637	2,563	-	465	1,920	7,726
Total	2,033	671	332	994	1,164	6,589	10,699	505	854	7,061	30,902



Value of Outdoor Recreation and Tourism

The importance of the tourist and recreation industry can be seen in the income attributed to recreation as described in the Bonneville Power Administration study of recreation in the Pacific Northwest. Based on data contained in that study, it is estimated that annual recreation expenditures within the Willamette Subregion included \$153 million by tourists and \$76 million by nontourists for a total of \$229 million. These expenditures represent the equivalent of 25,400 employees and add considerably to the economy. In this subregion, as in the entire region, only a small part of the outdoor recreation and tourism potential is utilized.

FUTURE DEMAND

The Willamette Subregion's population is expected to increase to 1.7 million in 1980 and reach about 3.2 million by year 2020. About two-thirds of the Oregon population reside in the Willamette Basin, and of these almost two-thirds live in or near the cities of Portland, Salem, and Eugene. Most of the recreation demand, both now and in the future, is generated by the population concentrations in the major cities. Indications of future population distribution are that the trend toward urbanization will continue. About 13 percent of the regional demand falls in this subregion. Demand generated by the resident population is expected to increase from 92 percent of the total demand in 1980 to 95 percent by year 2020. Figure 36 shows the projected recreation demand in this subregion^{1/}.

^{1/} Future recreation demand for the Type 2 Willamette Basin report is as follows:

	<u>1980</u>	<u>2000</u>	<u>2020</u>
	(1,000 Recreation Days)		
Water Related	23,546	36,655	60,592
Nonwater Related	49,268	75,968	118,332
Total	<u>72,814</u>	<u>112,623</u>	<u>178,924</u>

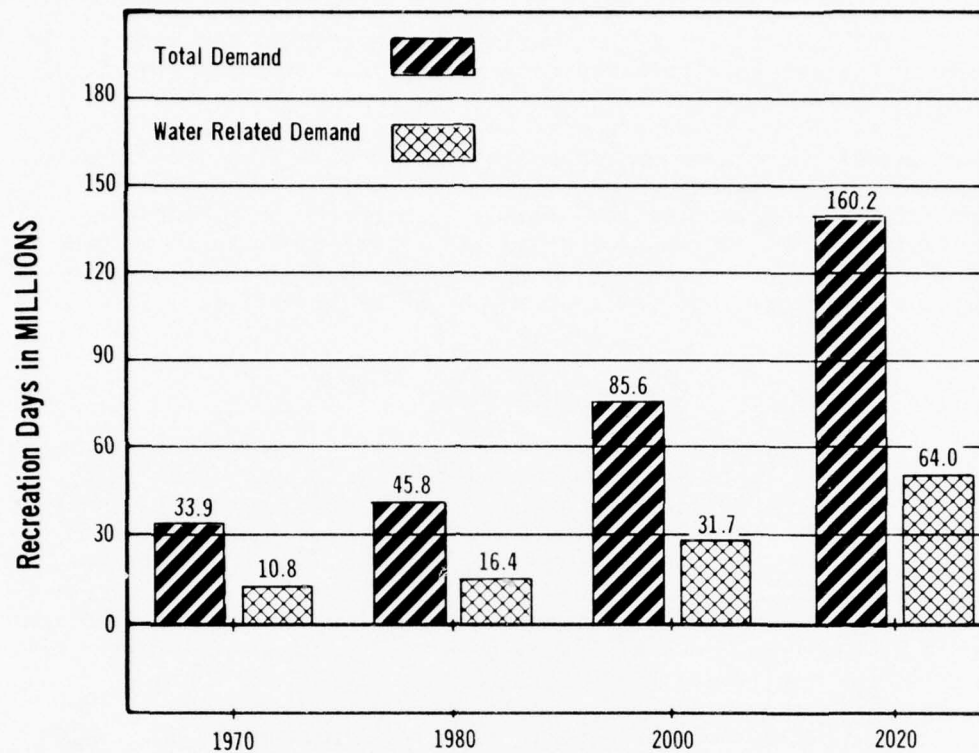


FIGURE 36 Expected Growth of Recreation Demand Subregion 9

The demand for water related activities was further delineated and is shown in table 104. These activities include both those requiring actual water surface, such as swimming, fishing, boating, and water skiing, and those activities that occur on land but are enhanced when located near the water.

Table 104 - Projected Demand, Water Related Recreation,
Subregion 9

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	7,100	11,000	22,000	41,000
Water Skiing	432	656	1,276	2,664
Swimming	3,192	4,848	9,430	19,689
Fishing	1,125	1,381	1,828	2,385
Sightseeing	5,427	8,242	16,031	33,470
Picnicking	4,300	6,531	12,703	26,522
Camping	2,817	4,278	8,321	17,372
Other ^{1/}	2,611	3,964	7,711	16,898
Total	27,000	40,900	79,300	160,000
Recreation Days ^{2/}	10,800	16,360	31,720	64,000
Type II Study	-	23,546	36,655	60,592

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

OUTDOOR RECREATION NEEDS

Comparison between demand for 1970 (33.9 million recreation days) and the expected 1970 use (28.0 million recreation days) indicates that about 82 percent of the total subregion demand was being met by existing developments. City and county areas are usually designed to accommodate intensive day-use, while the more remote areas under jurisdiction of the Federal and State levels provide for overnight and vacation uses. Studies indicate that about 60 percent of the total demand generated from a population center is for close-in day-use areas, while 30 percent is for weekend trips up to 125 miles. An analysis made on this basis might show a need for additional land and water in certain areas. The need for recreation facility development is shown in figure 37.^{1/}

^{1/} Projected development needs for the Type 2 Willamette Basin report are as follows:

	1980	2000	2020
	(1,000 Recreation Days)		
Water Related	9,283	22,392	46,329
Nonwater Related	4,782	11,457	22,048
Total	14,065	33,849	68,377

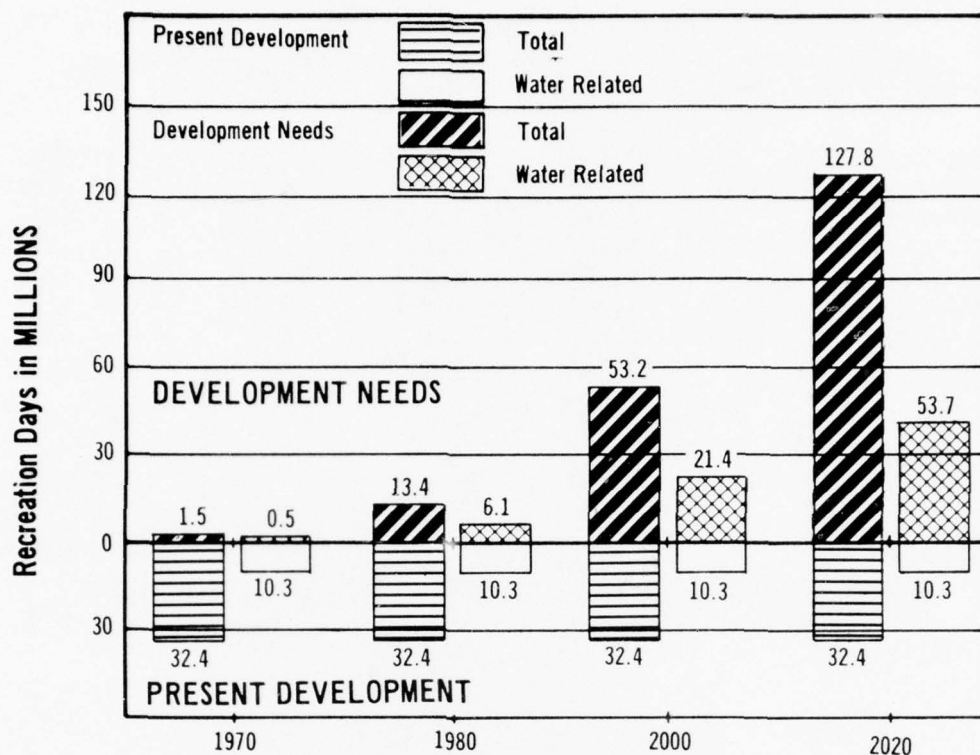


FIGURE 37 Need for Recreation Facility Development

Subregion 9

MEANS TO SATISFY NEEDS

Protection of Resources

There is need for preservation of the excellent resources of the subregion to provide environmental quality as well as opportunity for future population to enjoy. The location of some of these features are shown on figure 38.

To assure an adequate supply of land and water for future use, steps must be taken now to initiate measures to protect, and in some cases enhance, the quality of these resources.

The tremendous popularity of certain recreation areas, particularly those close to the metropolitan centers, has caused severe overuse of some sites. This is generally compounded by insufficient development of sites and a lack of alternative sites



LOCATION MAP

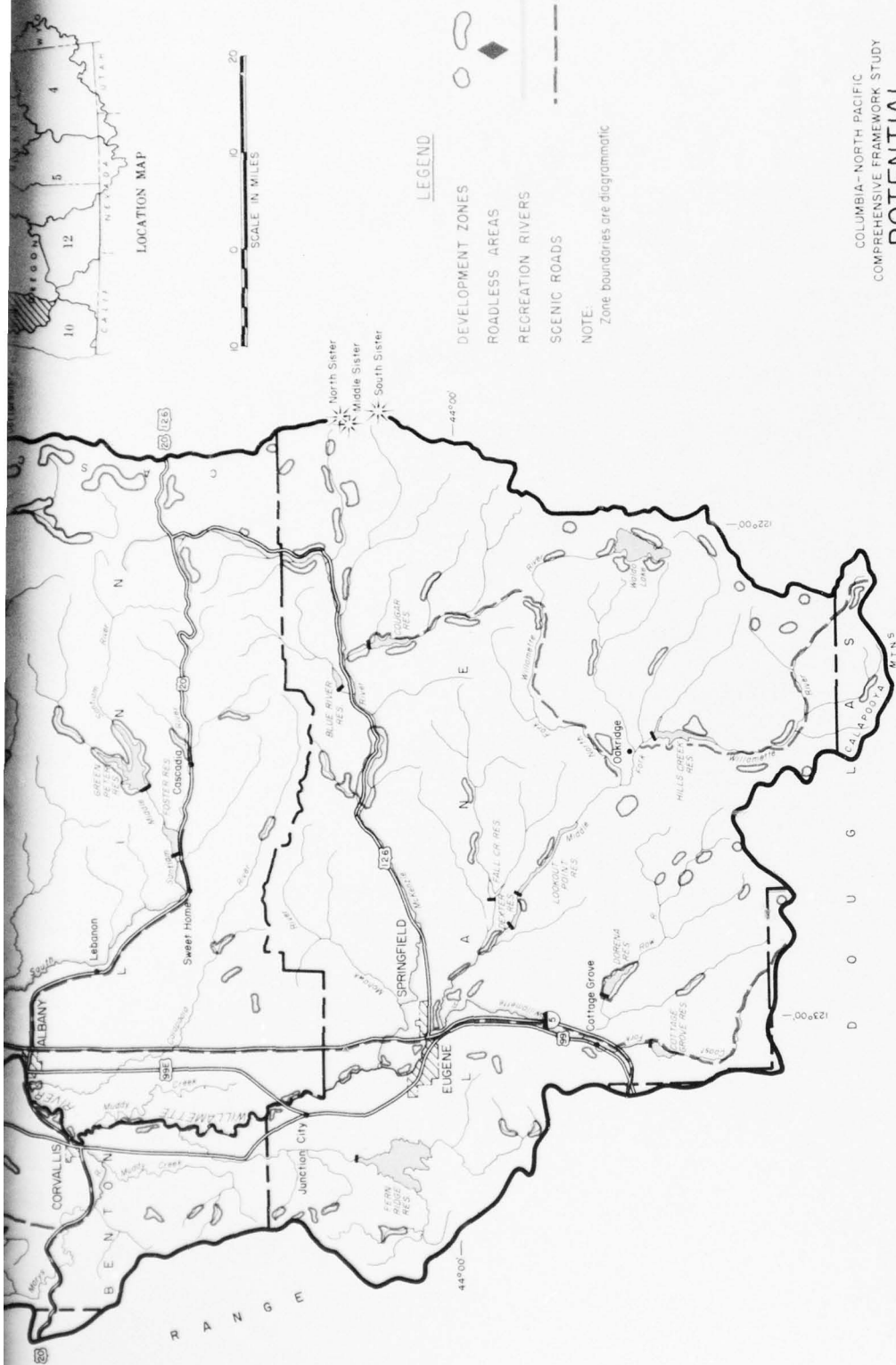


FIGURE 38

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PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COLUMBIA-NORTH PACIFIC REGION COMPREHENSIVE FRAMEWORK STUDY OF --ETC(U)
JUN 71 E L ARNOLD, R P CLARK, R J COFFMAN

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to handle overflow. Flood-plain zoning and might be methods of preserving open space and of greatest need near the metropolitan centers.

Since an increasing number of the recreational areas are in urban environments, there is an increasing loss of the natural environment and simple ecological principles. There is misuse of many sites by visitors who simply do not care. Many thousands of dollars are spent each year in cleaning up after thoughtless or uninformed recreationists. A public education campaign is a must to obtain compliance with necessary rules and regulations.

A small percentage of hard-core malcontents vandalize or destroy facilities and natural attractions in recreation areas for the majority. A few of these individuals cause damage to drastically set back the recreation program. Funds which would be used to develop new sites are spent to replace or repair vandalized facilities.

All levels of governmental planning should insure the acquisition of sufficient land and water resources for appropriate recreation development in the subregion. Attention should be given to the protection of flood plain courses. A study of the flood plains should be made to determine the need for zoning in order to protect the value of these important lands. This is especially true in the urban areas where there is immediate danger to residential and commercial enterprises.

Many historic and cultural values in the subregion should be preserved for future generations. A plan for the protection of these values should be developed as soon as possible.

Quality recreation must also be considered in the satisfaction of needs. For example, there should be a balance between free-flowing stream segments and developed opportunities. Where streams pass through populated areas their importance for recreation use increases. The Willamette River traverses the subregion north and south of all the major population centers. The value of the river for recreation has been at least partially recognized by the Willamette River Parks System program. This program is financed by the State and financed by the Land and Water Conservation State, county, and local matching monies. There is a series of parks along the Willamette River. Many of these parks will be connected by land. This is one of the largest and most desirable recreation program underway within the Willamette Basin.

There are many other streams in the subregion which are important for outdoor recreation use. Table 105 is a list of the principal streams which are recreationally important.

Table 105 - Principal Recreation Streams, Subregion 9^{1/}

Description	Miles	Acres at 320/mile
Sandy River - boundary of Mt. Hood Wilderness to confluence with Columbia River.	43	13,760
Clackamas River - free-flowing segment from junction with Oak Grove Fork to confluence with the Willamette River.	47	15,040
Santiam River - origin to confluence with the Willamette River.	12	3,840
North Santiam River - from Big Cliff Dam to confluence with South Santiam River.	46	14,720
Little North Santiam River - from town of Elkhorn to confluence with North Santiam.	14	4,480
South Santiam River - from Foster Dam to confluence with North Santiam River.	38	12,160
McKenzie River - from origin to confluence with the Willamette River.	91	29,120
Willamette River - from junction of the Middle and Coast Fork to its confluence with the Columbia River.	187	59,840
Middle Fork - Dexter Dam to its confluence with the main stem of the Willamette River.	17	5,440
Coast Fork - Cottage Grove Dam to confluence with the main stem of the Willamette River.	30	9,600
Tualatin River - from Scoggins Creek to confluence with the Willamette River.	60	19,200
Yamhill River - lower 5 miles.	5	1,600
Pudding River - lower 2 miles.	2	640
Marys River - lower 5 miles.	5	1,600
Subregion Total Miles and Land Acreage	597	191,040

^{1/} The list of principal streams in the Type 2 Willamette Basin Study includes an additional 758 miles of waterways and an added 242,360 acres (given in the Plan Formulation Appendix).

Development of the Resources

Table 106 lists the estimated requirements for land and water by activity.

Table 106 - Land and Water Requirements for Water Related Demand, Subregion 9

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking				
Land	7,950	10,900	20,000	37,900
Water	15,900	21,800	40,000	75,800
Swimming				
Land	120	160	300	400
Water	360	480	900	1,200
Boating and Water Skiing				
Land	1,090	1,720	3,470	6,550
Water	57,100	88,500	175,200	329,400
Shoreside Hiking				
Land	1,500	2,000	3,000	6,000
Water(not determined)				
Total Land (Rounded)	10,700	14,800	26,800	50,900
Total Water (Rounded)	73,400	110,800	216,100	406,400

Table 107 contains an estimate of the acquisition and development needs by level of administration.

Table 107 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 9

	(1)	(2)	(3)			(4)			(5)		
	Land ^{1/} Inventory BOR I & II	Existing Facility Development	Water Related ^{2/} Development Needs			Land Acquisition Needs			Facility Development Needs		
	(1,000 Acres)		1980	2000	2020	1980	2000	2020	1980	2000	2020
						(1,000 Acres)					
Federal	57.8	1.6	3.1	5.6	10.7	-	-	-	1.5	4.0	9.6
State	2.2	0.4	3.2	5.9	11.2	1.0	3.7	9.0	2.8	5.5	10.8
County and Municipal	1.5	0.2	5.8	10.5	19.8	4.3	9.0	18.3	5.6	10.3	19.6
Private	0.3	0.3	2.7	4.8	9.2	-	-	-	2.4	4.5	8.9
Total	61.8	2.5	14.8	26.8	50.9	5.3	12.7	27.3	12.3	24.3	48.9

^{1/} Data from table 101 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{2/} Data from table 102 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

^{3/} Data from figure 37.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water related needs for specific activities.

Swimming

There is enough water surface to support all demand for swimming. However, most of this demand is centered in the heavily populated areas. Then too, much of the water surface in the sub-region is not suitable for swimming because of pollution, temperature, undesirable shoreline, and other factors. Therefore, the demand for swimming can best be met through a program of pool development in the urban areas, and development of suitable beach space in the rural areas. A total of 290 acres of beach will be required by 1970, 375 acres by 1980, and 1,380 acres by 2020.

Boating

Table 108 lists the projected number of pleasure boats in the Willamette Subregion.

Table 108 - Pleasure Boats and Projections, Subregion 91/

<u>Class</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	53,278	82,581	163,510	307,399
Car Top	8,372	12,977	25,694	48,305
Moored	11,417	17,696	35,038	65,871
Stored	3,045	4,720	9,346	17,570
Total ^{2/}	76,112	117,974	233,588	439,145

1/ Based on data from Pleasure Boating in Oregon, State Marine Board.

2/ The Type 2 Willamette Basin report shows 50,181 for 1980: 70,482 for 2000; and 106,918 for 2020 (includes only registered boats.)

The estimated number of lanes of launching ramps required to satisfy the need is:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
532	825	1,635	3,074

The demand for boating water includes both still and running water. A desirable balance between the two is the goal. Fishing, cruising, and water skiing are the leading uses of pleasure boats, with the peak days coming on weekends. The favorite month is July, with August a close second. Additional water access sites will be needed to accommodate the boating demand. A total of 1,063 acres of land for access, parking, and appurtenant facilities will be needed by 1970, 1,649 acres by 1980, and 6,139 acres by 2020.

Camping and Picnicking

There is an increasing need to develop more facilities for camping and picnicking. This need is particularly acute west of the Willamette River. The land requirements to accommodate these activities adjacent to water are estimated to be 25,714 acres in 1970, 34,207 acres by 1980, and 119,608 acres by 2020. Development on private land will be necessary if demand for these activities is to be met.

Hiking and Riding

Public land east of the Willamette River contains ample opportunities for hiking and riding. However, more hiking and riding trails are needed closer to population centers and throughout the area west of the Willamette River. A good potential here would be the use of banks along irrigation canals for trails.

Trails should be constructed along many of the major streams such as the Willamette and McKenzie Rivers. Trails are needed to accommodate motorized trail equipment as well as horses and hikers. Trail development is also needed to provide access to high lakes and streams.

Driving for Pleasure and Sightseeing

There is an excellent road network in the subregion which provides not only good access, but many scenic driving experiences as well. Future access roads should be designed for scenic quality as well as for functional purposes.

A good system of roadside information and interpretive signing is needed to enhance and expand the scenic driving experience. Signing to explain historical and natural features is an example.

Winter Sports

The resource requirements for supporting downhill skiing are quite restrictive. There are virtually no opportunities for skiing west of the Willamette River. Essentially, all of the downhill skiing occurs along the Cascade Crest. For this reason, other forms of winter sports need to be expanded to provide opportunities throughout the subregion. Cross-country skiing and snowmobiling are examples of activities which can take place in areas unsuitable for downhill skiing. Facilities to accommodate these uses are badly needed.

Other

Private recreation development will become increasingly important in future years as development on public land nears optimum capacity. At such time, the returns from private investments will justify the expense of constructing the more intensive facilities such as campgrounds, trailer parks, etc. In the interim, leasing of hunting and fishing rights and other low investment activities on private land can assist the overall recreation development of the basin. Legislators and lawmakers should study the tax structure and liability laws on private lands in an effort to provide feasible methods of tax and liability relief which are necessary before full-scale public recreation on private land can become a reality.

COST OF RECREATION PROGRAMS

To provide needed facilities, land, access, and other programs necessary to accommodate the projected demands will require a substantial increase in the budgets of the recreation administering agencies. Table 109 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with suggested studies.

Table 109 - Development and Study Costs of Recreation Programs^{1/}
Subregion 9

Item	1970-1980	1981-2000	2001-2020	Total
			(\$1,000)	
Development Costs				
Investment	25,315	63,495	134,045	222,855
Annual OM&R	1,525	3,825	8,075	13,425
Study Costs				
Free Flowing Rivers	524	-	-	524
Roadless Areas	14	-	-	14
Scenic Roads	10	-	-	10
Total	27,388	67,320	142,120	236,828

^{1/} The Type 2 Willamette Basin Study assessed \$3.10 investment cost and \$0.25 OM&R cost per recreation day with the following results:

	1963-1980	1981-2000	2001-2020	Total
			(\$1,000)	1962-2020
Investment	43,600	61,330	107,040	211,970
Annual OM&R	3,516	4,946	8,632	17,094



LOCATION MAP

SUBREGION 10 - COASTAL

PRESENT STATUS

The Recreation Setting

Bounded on the west by almost 600 miles of Pacific Ocean shoreline and on the east by the Coast Range and Southern Oregon Cascades, the Coastal Subregion encompasses nearly 24,000 square miles. Over two-thirds of the subregion lies within Oregon, with the remainder in the State of Washington. Elevations range from sea level to 9,500-foot Mt. McLoughlin in southern Oregon. Topography varies from the coastal plain with shallow bays, tidal flats, stream deltas, and low headlands to the rough and mountainous coastal range. Outstanding natural features such as Crater Lake, Olympic National Park, and the Oregon sand dunes are found in the subregion. In addition, numerous other recreation areas are available, including the Forest Service Information Center at Cape Perpetua, Honeyman State Park in Oregon, Washington State ocean parks at Fort Canby and Ocean Beach, and numerous historic light-houses. The subregion's outstanding recreation resources make it one of the most significant areas for recreation in the United States.

Chinook Point National Historical Landmark, Fort Canby Historical State Park (originally established as Fort Cape Disappointment by the U.S. Army in 1864), Fort Columbia State Park, Lewis and Clark Campsite Heritage Site, and Willie Keil's Grave Heritage Site--all near the mouth of the Columbia River on the Washington side--have been dedicated and preserved for their historical and recreation value. On the Oregon side near the mouth of the Columbia, Fort Clatsop National Memorial marks the area where the Lewis and Clark Expedition wintered in 1805. A few miles east of Fort Clatsop, the first permanent American settlement west of the Mississippi was established at Astoria in 1811. In the southern part of the subregion the establishment of the Applegate Trail in 1846 and the Jacksonville Gold Rush beginning in 1849 led to the settlement of the Rogue and Umpqua valleys.

Archeological resources of the Oregon part of this subregion have been extensively surveyed along the entire coastline and, in places a mile or so inland. Several hundred sites have been recorded, but to date less than 10 have been excavated. The oldest known site at the present time dates back to about 1000 B.C.,

and some archeologists are of the opinion that the older sites have been flooded by the rising sea level in geologic time. Although hundreds of sites are recorded along the coast, only a small percentage remain. Unfortunately, the most suitable village sites were built on slightly elevated, level lands, which are also the most desirable sites for home and cabin sites, recreation developments, and highways today.

The Washington portion of the subregion is characterized by the fact that three separate language families were represented in the aboriginal speech of the area. Preliminary reconnaissance has revealed a variety of sites along the Strait of Juan de Fuca and the coastal margins around the two large estuaries--Grays Harbor and Willapa Bay. Only a few sites have been scientifically excavated on the Olympic Peninsula and the estuaries. Each excavation has revealed a complex of materials that differ from the others. The evidence indicates the prehistory of this area will prove to be far more complicated than originally thought. The rest of the Washington coast is relatively untouched, but various kinds of manmade developments will surely come with the consequent endangering of the archeological values.

The climate within most of the subregion is a marine type with cool summers, rather mild winters, moist air, and a small daily range of temperatures. Notable exceptions include the inland area of southern Oregon where summers are hot and winters are cold with moderate snowfall, and the higher elevations in the extreme northern portions of the subregion which receive heavy snowfall during the winter. Average annual precipitation varies between 20 inches in the Rogue River Valley to over 200 inches in the unique rain forests of the Olympic Peninsula. In most of the area, precipitation averages between 60 to 90 inches per year.

Forests of Douglas-fir, hemlock, spruce, and cedar are abundant and provide extensive areas for recreation and commercial cutting. Salmon, steelhead, trout, striped bass, ocean fish and shell fish, and other marine life, along with deer, elk, waterfowl, and upland game contribute much to the overall recreation picture and are of major importance in the subregion.

The population of the subregion in 1965 was 405,500. This represented about 7 percent of the regional total. Principal cities include Aberdeen and Hoquiam in Grays Harbor County, Washington, and Astoria, Coos Bay, Grants Pass, Medford, and Roseburg in Oregon.

Paralleling the Pacific Ocean between the California and Washington borders, Highway 101, often almost touching the water, provides a scenic vista for those traveling north or south in the subregion. Further north, two sections of the Washington State

Scenic and Recreational Highway System offer additional panoramas of the ocean. These include State Route 109 from its northern intersection with U.S. 101, south, to just west of Hoquiam, and State Route 105 from just south of Aberdeen to Raymond. No railroad passenger service exists in the subregion, but commercial airlines provide passenger service to the cities of Hoquiam, Astoria, and Coos Bay.

Available Outdoor Recreation Resources

Major Recreation Areas

In Oregon The Oregon Coast. Stretching for 400 miles and easily accessible from U. S. Highway 101, the Oregon coast contains many state parks which are among the finest in the country. The seascapes, particularly in southern Oregon, are unexcelled. The Oregon Dunes area, between the cities of Florence and Coos Bay, is a place of outstanding beauty and is also of major geologic significance. Cascade Head and Cape Perpetua are outstanding examples of coastal headlands. Overlooks are easily accessible by well developed trail systems.

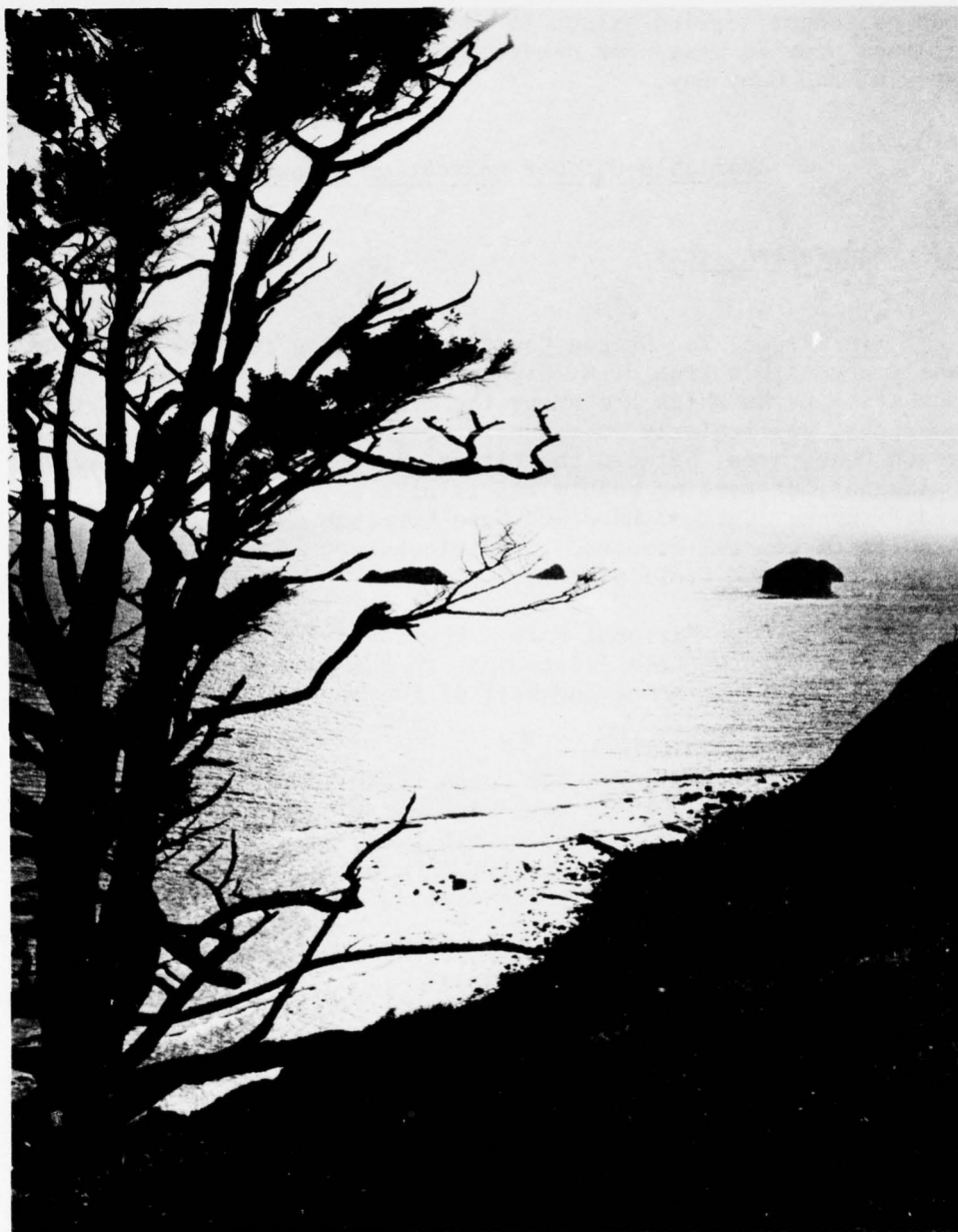
Crater Lake National Park. The world-famous Cauldera of Mt. Mazama - Crater Lake - lies just to the east of the subregional boundary. However, about one-half of the park is within the Coastal Subregion.

Rogue River Valley. The Rogue River scenery and the steelhead and salmon fishing are world famous. About 100 miles of the lower river have been included within the Wild and Scenic Rivers System. The Illinois, a major tributary of the Rogue, has been designated for study for possible addition to the system.

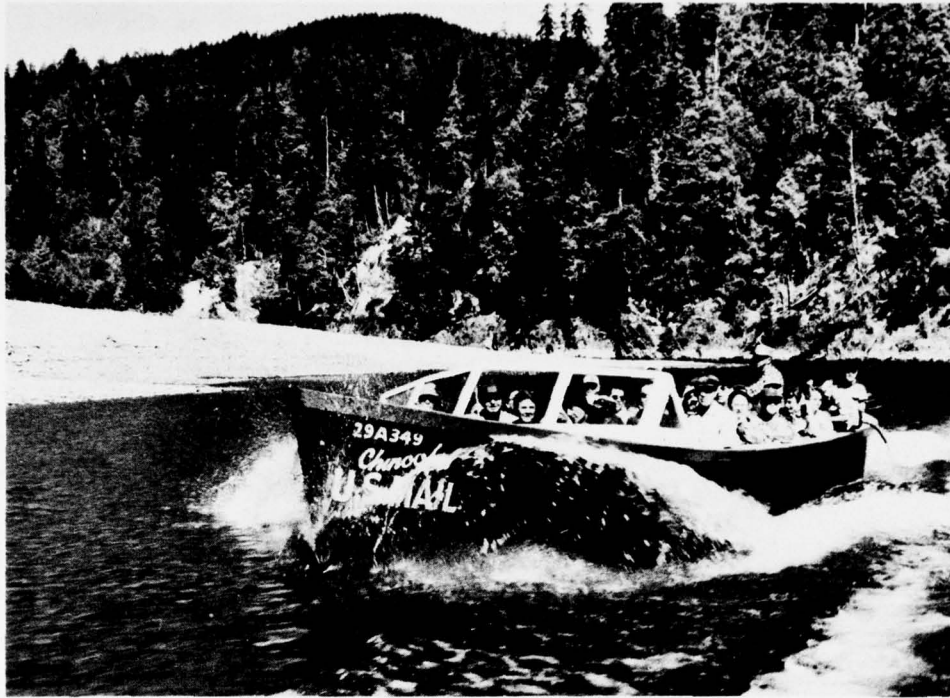
Oregon Caves National Monument. A popular summertime spot in a colorful mountain setting, the caves are in southern Oregon 50 road miles south of Grants Pass.

Kalmiopsis Wilderness. Lying within the Siskiyou National Forest, this wilderness tract contains 76,900 acres.

Diamond Lake and the North Umpqua River. Outstanding scenery and trout and steelhead fishing characterize this area. It is served by a good road system and is growing in popularity.



Sunsets on Oregon's coastline are always beautiful. This scene is just south of Humbug Mountain along Oregon's 400-mile coastal highway, U.S. 101. Silhouettes of seastacks and the glistening Pacific water, smooth sandy beaches, imposing headlands, and gnarled seablown trees all lend to make eye-catching pictures. (Oregon State Highway Department Photo)



Not exclusively a mail boat is the Chinook, one of several such speed boats which carry tourists as well as mail from Wedderburn on the southern Oregon coast to Agness, 32 miles up the winding Rogue River. The trip is one of the highlights of any vacationer's visit to the coast. (Oregon State Highway Department Photo)

In Washington The Washington Coast. Washington's 200-mile scenic oceanscape is one of the last untrammelled ocean beach areas in the United States. Excellent fishing, clam digging, beachcombing for driftwood, picnicking, hiking, camping, and other recreation opportunities abound. The world's longest stretch of sandy beach--28 miles--at Long Beach is ideal for horseback riding, razor clam digging, and other activities.

Olympic National Park. Located on the Olympic Peninsula, this is a unique area of wilderness, rugged mountains, coniferous rain forests, wildlife, glaciers, lakes, streams, and seascapes. It contains nearly 1,400 square miles, of which approximately one-half lies within the Coastal Subregion.

Olympic Rain Forests. An extraordinary forest growth has developed during centuries of wetness in the western valleys of the Olympic Peninsula. Moss covered vine maple forms an understory beneath giant conifers. The forest appears to be filled with warm, green light.

Table 110 lists major recreation resources of the sub-region and figure 39 is a map showing the location of existing recreation resources and developed areas.

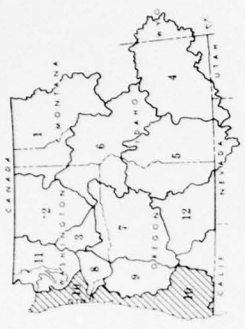
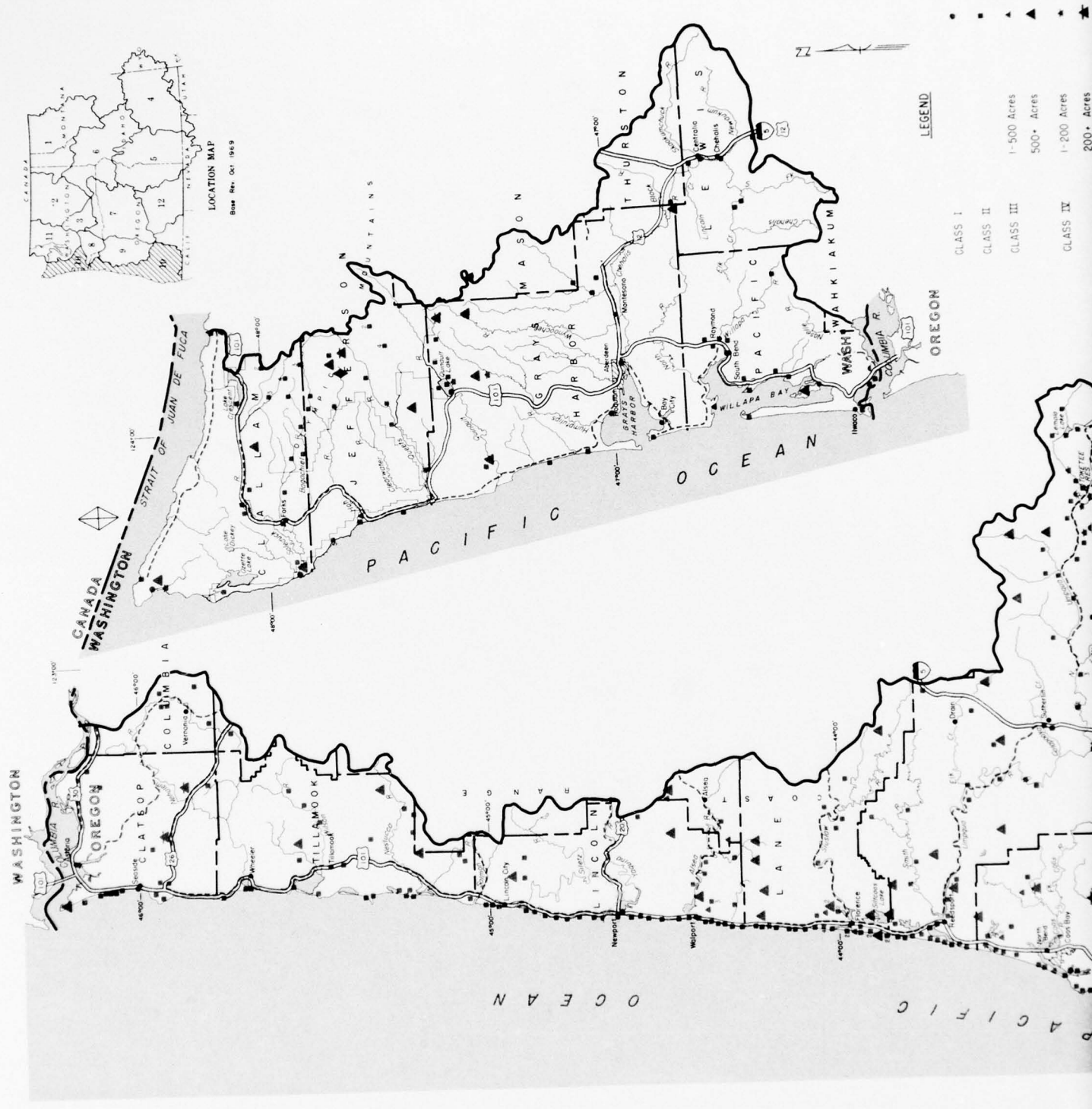
Table 110 - Major Recreation Resources in All Ownerships,
Subregion 10

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	9	5.0	
Lakes and Other Slack Water	22	32.1	
Other Water			
Small		67.3	
Large		117.3	
Total Water Surface		221.7	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	1		85
Study Rivers	1		75
Established Roadless Areas	1	76.2	
Established Scenic Roads			950

Source: Tables 1, 7, and 8.

Existing Supply

Table 111 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.



LOCATION MAP
Base Rev. Oct. 1969

- LEGEND**
- CLASS I 1-500 Acres
 - CLASS II 500+ Acres
 - CLASS III 1-200 Acres
 - CLASS IV 200+ Acres



WASHINGTON
OREGON
CALIFORNIA



LEGEND

- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- CLASS VI
- NATIONAL RIVERS
- SCENIC ROUTES
- NATIONAL PARK, WILDERNESS, & PRIMITIVE AREA BOUNDARIES

- 1-500 Acres
- 500+ Acres
- 1-200 Acres
- 200+ Acres
- Designated
- To be studied
- identified



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
EXISTING RECREATION AREAS
COASTAL SUBREGION 10

FIGURE 39

Table 111 - Acreage of Inventoried Lands by BOR Classes, Subregion 10, 1964^{1/}

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	0.04	0.14	0.17	1.48	-	1.83
II	10.04	12.38	10.60	0.34	-	33.36
III	5,469.06	637.66	4.63	0.97	-	6,112.32
IV	73.28	3.33	-	0.04	-	76.65
V	387.14	-	-	-	-	387.14
VI	1.39	0.61	-	0.01	-	2.01
Total Classed	5,940.95	654.12	15.40	2.84	-	6,613.31
Not Classed	22.75	574.78	160.40	53.16	7,629.80	8,440.89
Grand Total	5,963.70	1,228.90	175.80	56.00	7,629.80	15,054.20

^{1/} BOR classes are described in the Regional Summary.^{2/} Includes Indian Reservation.^{3/} From Appendix IV, Land and Mineral Resources.

Table 112 lists reported information on the extent of recreation development. This list includes only those facilities for which information was uniformly available.

Table 112 - Facility Development, Subregion 10

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	1,085	403	197	2	1,687	-	1,687
	Units	2,157	2,445	687	74	5,363	-	5,363
Trailer	Acres	651	129	65	8	853	-	853
	Units	1,136	530	453	145	2,364	3,208	5,572
Group	Acres	185	86	58	-	329	-	329
Picnicking	Acres	1,335	467	344	107	2,253	-	2,253
	Units	1,479	2,776	1,350	742	6,347	-	6,347
Marinas	Number	1	1	72	8	82	NA	82
	Slips	12	3	6	325	346	NA	346
Ski Areas	Number	2	-	-	-	-	-	2
	Lifts and Tows	7	-	-	-	-	-	7
Swimming Beaches (Organized)	Acres	20	1,634	48	285	1,987	-	1,987
Parks and Playgrounds	Number	7	2	5	30	44	-	44
	Acres	18	4	11	197	230	-	230

Dash (-) not reported.

NA - Not Available.

Use of Recreation Resources

Of the total 1965 recreational use inventoried in the Columbia-North Pacific Region, about 16 percent took place in the Coastal Subregion. Table 113 lists the use for 1965 by agency and by activity.

Value of Outdoor Recreation and Tourism

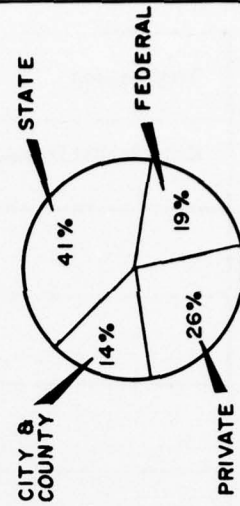
A rapidly expanding recreation and tourism industry centered on the area's ocean beaches and on the excellent salmon fishing opportunities have been creating new jobs in service and trading occupations. While logging and manufacturing of wood products will continue to be of major significance in the area's economy, growth and development will also stem from recreation and tourism. The use of the ocean beaches is increasing, and major resort areas as well as recreation developments have been expanding rapidly in the past few years. The importance of the recreation industry can be seen in the income attributed to recreation, as shown in the Bonneville Power Administration study of recreation in the Pacific Northwest. Based upon data contained in this study, it is estimated that annual recreation expenditures in the Coastal Subregion include \$152 million by tourists and \$76 million by nontourists for a total of \$228 million. These expenditures represent the equivalent of over 25,000 employees and add considerably to the economy.

FUTURE DEMAND

The Coastal Subregion's population is expected to increase to 465,500 in 1980 and reach about 709,000 by year 2020. Although the increased resident population will add to the future recreation demand, by far the greatest demands will be by nonresidents. In the southern part of the subregion, Californians will continue to take advantage of the scenic coastal areas of Oregon and attractions of the Rogue and Umpqua basins. Present demand within the northerly portion of the subregion is significantly greater than would be expected strictly on the basis of resident population. Thus, both existing and future demand generated in other subregions is being and will continue to be satisfied in the Coastal Subregion. The demand for outdoor recreation is expected to be as shown in figure 40.

Table 113 - Recreation Use, Subregion 10, 1965

Land Administering Agency	Swim- ing	Boat- Water		Fishing	Camping	Picnick- ing (1,000 Recreation Days)	Sight- seeing	Winter			Total
		ing	Skiiing					Sports	Hunting	Other	
Forest Service	35	25	5	475	210	180	675	50	145	110	1,910
Bureau of Land Management	15	30	9	204	68	129	810	5	176	114	1,560
Bureau of Reclamation											
National Park Service	75	149	45	74	171	374	1,640			162	2,690
Corps of Engineers											
Bureau of Sport											
Fisheries & Wildlife		2		81		1	1		1	1	3
Other Federal		116	9	740	1,029	3,244	4,672	9	1	1	95
State Agencies	1,430	116	9	740	1,029	3,244	4,672	91	2,141	13,472	13,472
County and Municipal	384	124	20	505	136	1,440	422	18	1,626	4,675	4,675
Private	642	148	29	706	536	1,798	2,620	516	1,392	8,387	8,387
Total	2,581	594	117	2,785	2,150	7,166	10,849	55	948	5,547	32,792



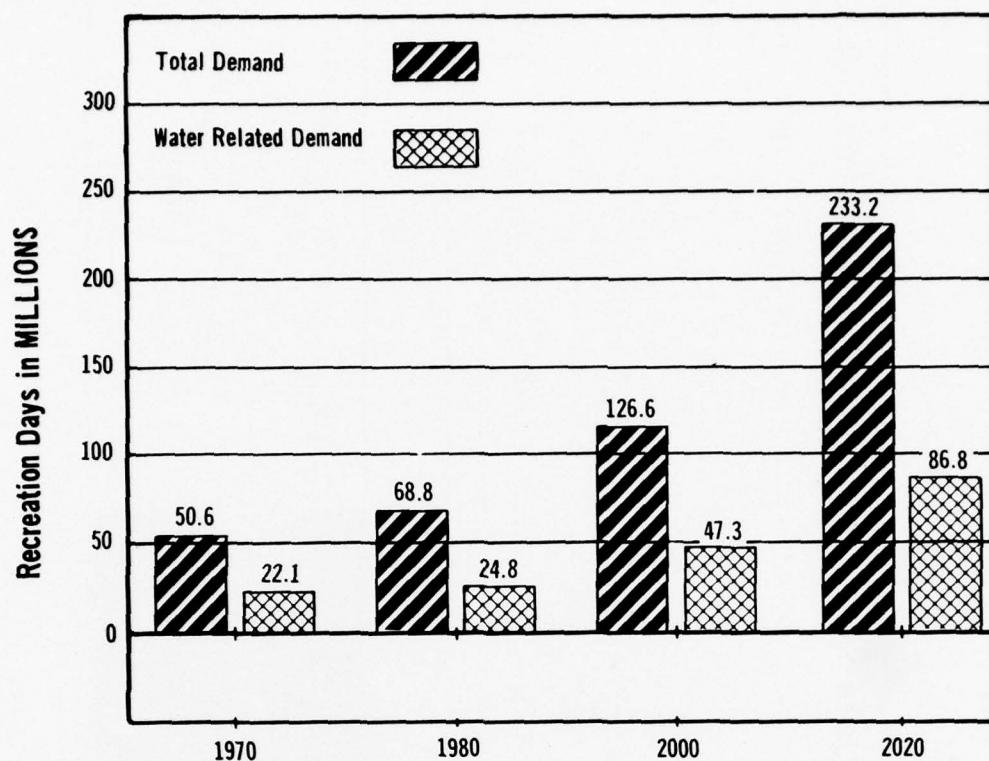


FIGURE 40 Expected Growth of Recreation Demand Subregion 10

The water related activities include both those requiring actual water surface such as swimming, fishing, boating, and water skiing and those activities that occur on land but are enhanced when located near the water. Demand for water related activities is shown in table 114.

Table 114 - Projected Demand, Water Related Recreation,
Subregion 10

Activity	1970	1980 (1,000 Occasions)	2000	2020
Boating	5,564	8,848	19,034	37,696
Water Skiing	1,073	1,136	2,165	3,973
Swimming	7,930	8,395	16,004	29,362
Fishing	2,990	3,870	5,124	6,684
Sightseeing	13,480	14,271	27,207	49,916
Picnicking	10,682	11,308	21,559	39,553
Camping	6,997	7,408	14,121	25,908
Other ^{1/}	6,484	6,864	13,086	24,008
Total	55,200	62,100	118,300	217,100
Recreation Days ^{2/}	22,100	24,800	47,300	86,800

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

OUTDOOR RECREATION NEEDS

Comparison between recreation demand for 1970 (50.6 million recreation days) in the Coastal Subregion and the estimated 1970 use (39.2 million recreation days) indicates that about 77 percent of the total subregion demand was being met at inventoried resources. Undoubtedly there is a portion of the demand being met at noninventoried resources, but the extent of this use is not known. Figure 41 shows the need for recreation facility development.

It is likely that demand will surpass the capability of the existing resources in 1970, and by 2020 a severe imbalance between supply and demand can be anticipated. Shortages in the early years are primarily associated with the northern portion of the subregion. However, by the year 2020, there will be a major shortage of recreation resources throughout the entire subregion unless new parks are acquired and developed.

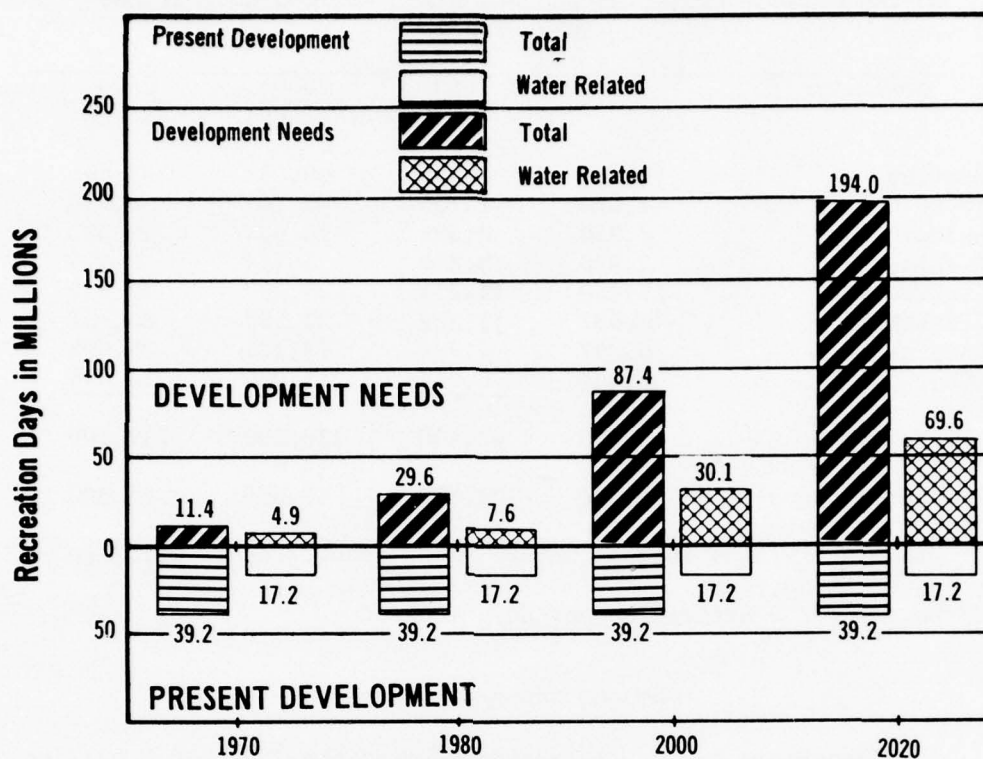


FIGURE 41 Need for Recreation Facility Development Subregion 10

MEANS TO SATISFY NEEDS

Protection of Resources

The entire Pacific coastal plain of the states of Oregon and Washington is included within the Coastal Subregion. This resource is facing increasing pressures from resident and non-resident recreationists, subdivision developers, and varied commercial and industrial enterprises. It can be expected that without comprehensive planning for the optimum utilization of this resource, intensive development will be accompanied by problems of pollution, shoreline erosion, ecological imbalances, and the impairment of natural scenic beauty.

In the Washington portion of the subregion, sites suitable for recreation purposes, both public and private, are limited in relation to demand, particularly along the ocean beaches. Major

efforts will be required to develop adequate facilities for recreation use which will maintain and enhance the natural environment. An already serious problem which will require greater effort to solve is the increasing water pollution levels resulting from manufacturing plants in the area.

An important legislative action by the 40th Legislature of the State of Washington, in terms of environmental protection, is the Washington State Seashores Conservation Area. This act, although restricted in scope by subsequent Supreme Court action, provides that ". . . all lands in State ownership lying between the mouth of the Columbia River and the mouth of the Elwah River from ordinary high tide line to the line of extreme low tide be maintained in public ownership under the protection and administration of the State Parks and Recreation Commission." The Seashores Conservation Area act protects a vast recreation and scenic resource and an important food and shellfish resource for public use.

In the Oregon portion of the subregion, if the existing high-quality environment is to be maintained, major efforts will be necessary in the form of: (1) maintaining and enlarging upon the existing scenic roads and highways (including adjacent scenic corridors of land); (2) dedicating the major portions of all 25 free-flowing rivers and segments, including adjacent scenic corridors; (3) building several small reservoirs in upper tributaries for recreation, fishing, and improving quantity and quality of downstream summer flows; (4) regional land-use zoning to insure that commercial developments and private recreation facilities are harmonious with surroundings and of the proper density; (5) improving the wildlife habitat on the Federal lands, the privately owned timber lands, and ranch lands; (6) constructing and maintaining public and private high quality recreation facilities (including trails) to satisfy needs; (7) preserving existing primitive, historical, and archeological values; and (8) limiting the recreation use before it begins to cause deterioration in either the environment or the recreation experience. The latter situation is projected to begin about the year 2000.

To provide the widest range possible for water-based recreation, it is necessary to maintain a balance between free-flowing streams, slack water areas, and salt water opportunity. This subregion contains a number of excellent free-flowing streams, some of which may be of national significance. The Rogue River has already been included within the national system and the Illinois has been designated for study to determine its potential. Table 115 contains a list of streams which are considered as important recreation rivers that may need further study. This list is only preliminary and may be added to or deleted upon more detailed study.

Table 115 - Principal Recreation Streams, Subregion 10

Description	Miles	Acres at 320/mile
<u>Components of the National Wild and Scenic River System (P. L. 90-542)</u>		
Rogue River - a segment of river from its junction with Applegate downstream to Lobster Creek Bridge.	85	27,200
<u>Rivers Designated for Study in the Wild and Scenic Rivers Act (P.L. 90-542 Sec. 5(a))</u>		
Illinois River - all.	75	24,000
<u>Other</u>		
Quillayute River - from junction of Bogachiel and Soleduck Rivers to its mouth	7	2,240
Soleduck River - from Olympic National Park boundary to confluence with the Bogachiel River.	51	16,320
Bogachiel River - from Olympic National Park boundary to its confluence with the Soleduck River.	16	5,120
Hoh River - Olympic National Park boundary to mouth.	30	9,600
Wynoochee River - free-flowing segments from origin to mouth.	65	20,800
Naselle River - origin to mouth.	28	8,960
Humptulips River - origin to mouth.	28	8,960
West Fork, Humptulips River - origin to its junction with the East Fork.	28	8,960
East Fork, Humptulips River - origin to its junction with the West Fork.	17	5,440
Nehalem River - main stem from origin to mouth.	114	36,480
Miami River - origin to mouth.	12	3,840
Kilchis River - from the junction of the North and South Forks to its mouth.	14	4,480
North Fork, Kilchis River - from origin to its junction with the South Fork.	6	1,920
Wilson River - from origin to its mouth.	42	13,440
Trask River - origin to its mouth.	18	5,760
North Fork - from its origin to its junction with the South Fork.	13	4,160

Table 115 (Cont.)

Description	Miles	Acres at 320/mile
Nestucca River - from its origin to its mouth.	50	16,000
Little Nestucca River - from its origin to its mouth.	18	5,760
Salmon River - origin to mouth.	16	5,120
Siletz River - origin to mouth (includes North Fork).	74	23,680
Alsea River - from town of Alsea to its mouth.	49	15,680
Siuslaw River - from confluence with Lake Creek to mouth.	29	9,280
Lake Creek - from Triangle Lake to confluence with Siuslaw River.	19	6,080
Smith River - main stem from junction with the South Fork to its mouth.	58	18,560
Rogue River - segment from Lost Creek Dam to Gold Ray Reservoir	33	10,560
Segment from Save Rapid Dam to confluence with Applegate River.	13	4,160
Umpqua River - from its junction with the North Umpqua and South Umpqua Rivers to its mouth.	87	27,840
North Umpqua River - from Lemola Dam to its confluence with the Umpqua River.	83	26,560
Sixes River - main stem, origin to mouth.	28	8,960
Chetco River - origin to mouth.	55	17,600
Elk River - origin to mouth.	30	9,600
Applegate River - from California-Oregon border to confluence with Rogue River.	51	16,320
Total Miles Federal Designated Rivers	85	27,200
Total Miles Study Rivers Section 5(a)	75	24,000
Total Miles Other Rivers	<u>1,182</u>	<u>378,240</u>
Subregion Total Miles and Land Acreage	1,342	429,440

Figure 42 is a map showing potential recreation development zones and other features.

Development of the Resource

Table 116 lists the estimated land and water requirements by activity.

Table 116 - Land and Water Requirements for Water Related Demand, Subregion 10

Activity	1970	1980	2000	2020
		(Acres)		
Camping and Picnicking				
Land	7,000	9,400	17,400	32,100
Water	14,000	18,800	34,800	64,200
Swimming				
Land	100	140	250	480
Water	300	420	750	1,440
Boating and Water Skiing				
Land	500	750	2,450	4,370
Water	22,600	33,200	63,600	117,300
Shoreside Hiking				
Land	1,250	1,700	2,500	4,600
Water (not determined)				
Total Land (Rounded)	8,900	12,000	22,600	41,600
Total Water (Rounded)	36,900	52,400	99,200	182,900

Table 117 contains an estimate of the acquisition and development needs by level of administration.

Table 117 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 10

	(1) Land ^{1/} Inventory BOR I & II	(2) Existing ^{2/} Facility Development	(3) Water Related ^{3/} Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
	(1,000 Acres)		1980	2000	2020	1980	2000	2020	1980	2000	2020
						(1,000 Acres)					
Federal	9.1	3.0	1.8	3.4	6.2	-	-	-	-	0.4	3.2
State	8.5	1.8	7.1	13.3	24.5	-	4.8	16.0	5.3	11.5	22.7
County and Municipal	6.9	0.7	1.9	3.6	6.7	-	-	-	1.2	2.9	6.0
Private	0.4	0.4	1.2	2.3	4.2	-	-	-	0.8	1.9	3.8
Total	24.9	5.9	12.0	22.6	41.6	-	4.8	16.0	7.3	16.7	35.7

^{1/} Data from table 111 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water).

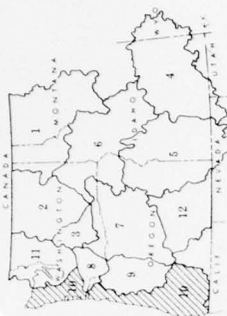
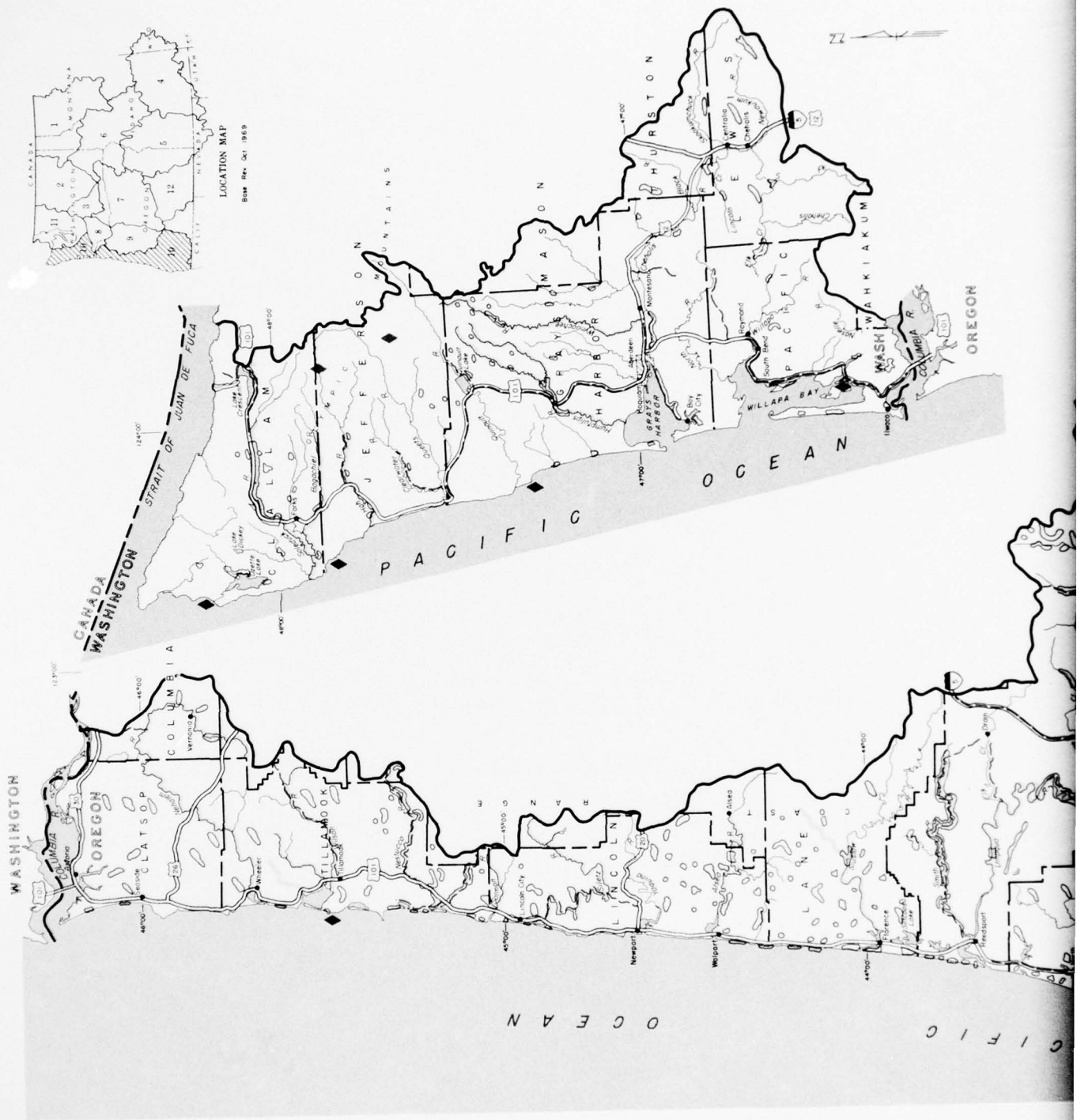
^{2/} Data from table 112 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water).

^{3/} Data from figure 41.

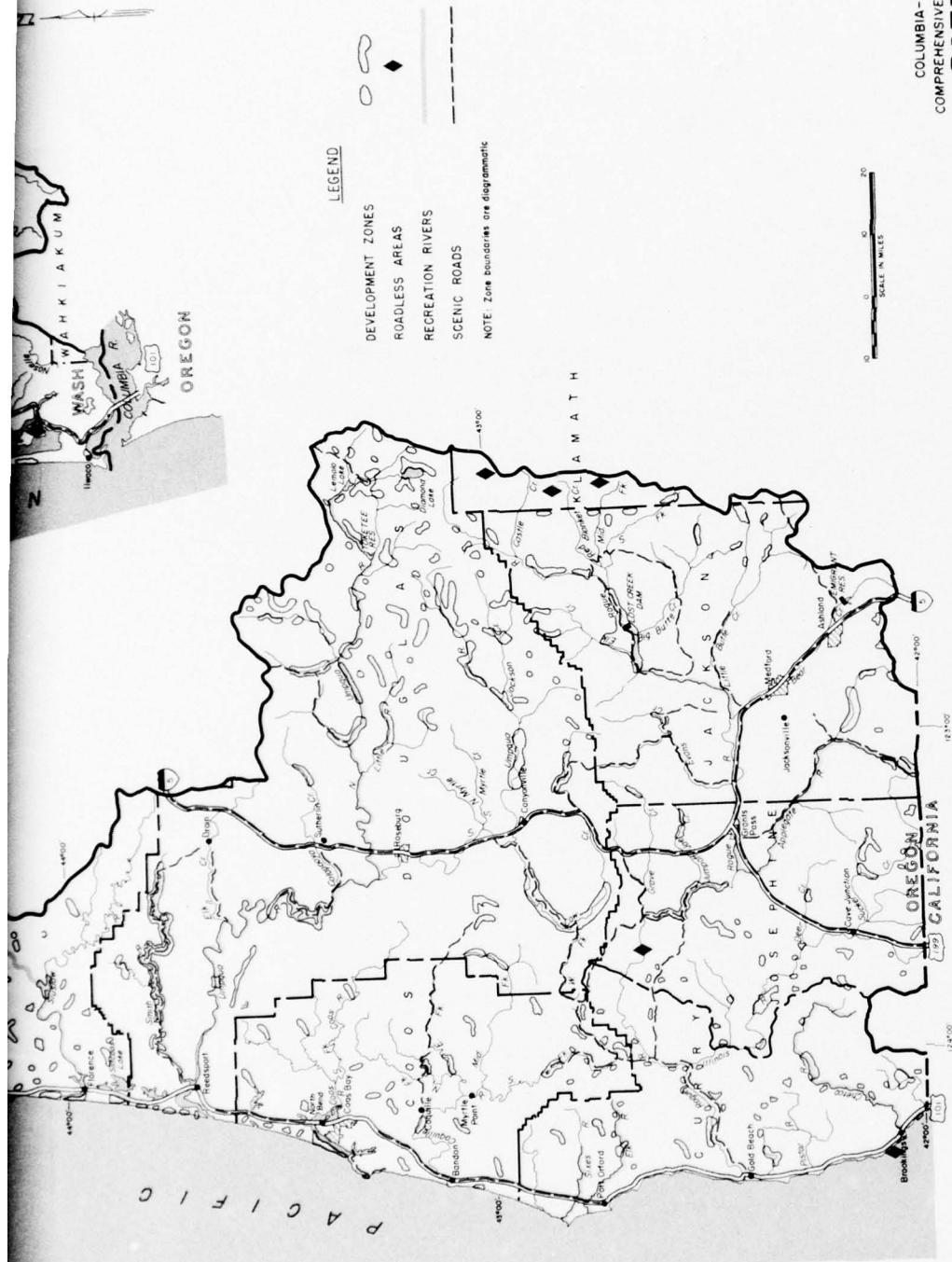
NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.



LOCATION MAP
Base Rev. Oct. 1969



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**POTENTIAL
RECREATION AREAS**
COASTAL SUBREGION 10

FIGURE 42

Activity Development Needs

The following discussion considers the water related recreation needs for specific activities.

Swimming

The demand for nonpool swimming facilities in the Coastal Subregion is expected to increase at a rate of more than 4 percent annually to 2020. This growth is significantly greater than the population growth rate of 1 percent per year, indicating that the demand for the activity is increasing faster than the population size and also that, to a certain extent, increased mobility and externally generated demand will cause the demand for swimming to increase in future years at a much higher rate than the population of the subregion.

Based in part on the foregoing, the following land and water requirements for swimming in future years can be projected to be 100 acres by 1970, 140 acres by 1980, 250 acres by 2000, and 480 acres by year 2020.

Boating

The following table lists the estimated number of pleasure boats and projections.

Table 118 - Pleasure Boats and Projections, Subregion 10^{1/}

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	21,000	31,000	59,500	109,000
Car Top	3,300	4,900	9,300	17,400
Moored	4,700	6,600	12,500	23,500
Stored	1,200	1,700	3,400	6,500
Total	30,200	44,200	84,700	156,400

^{1/} Based on preliminary data from Survey of Boating Needs, State of Washington, Corps of Engineers, 1969.

On the basis of the above information, the estimated number of boat launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
225	325	600	1,100

Additional water access sites will be needed to accommodate the boating demand. A total of 500 acres will be required by 1970, 750 acres by 1980, 2,450 acres by year 2000, and 4,370 acres by year 2020.

Camping and Picnicking

There will be a need to expand the capacity of camping and picnicking facilities now and in the future. Sites located near main routes of travel, near population centers, and near the ocean beaches are of primary need. The land requirements to accommodate the activities adjacent to water, being stream, lake, reservoir, or ocean, are estimated to be 7,000 acres in 1970, 9,400 acres by 1980, 17,400 acres by 2000, and 32,100 acres by year 2020. It may be necessary to acquire private lands to provide public facilities because most of the lands located adjacent to water are now in private ownership.

Hiking

A large part of the hiking demand will be satisfied on the national forest, state park lands, and on the ocean beaches. Trail development may be needed to provide access along rivers and to lakes.

Driving for Pleasure and Sightseeing

There are 1,100 miles of potential scenic roads in this subregion. Many of these roads could be enhanced by providing turnouts and parking at the more scenic areas and by controlling brush. The use of these roads could be greatly enhanced by the circulation of news articles and pamphlets.

Winter Sports

This subregion has a few areas suitable for winter sports, these are mostly in the southeast such as Diamond Lake, Crater Lake, Union Creek, and Mount Ashland. The warm winters and relatively low mountains do not provide the setting for extensive winter sport activities.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, programs, and lands necessary to accommodate the projected demand will require a substantial increase in the budgets of the recreation administering agencies. Based on the percentage of water related demand to total recreation demand, there will be a need to accommodate the following:

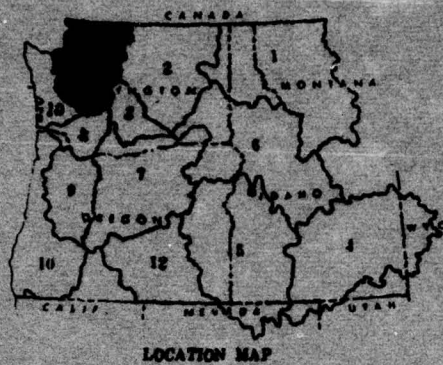
Table 119 - Water Related Recreation Demand to be Satisfied,
Subregion 10

Item	1970	1980	2000	2020
		(1,000 Recreation Days)		
Total	5,000	10,900	32,300	71,800
Incremental	5,000	5,900	21,400	39,500

Table 120 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with suggested studies.

Table 120 - Development and Study Costs of Recreation Programs,
Subregion 10

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	31,540	93,375	163,925	288,840
Annual OM&R	1,900	5,625	9,875	17,400
Study Costs				
Free Flowing Rivers	1,131	-	-	1,131
Roadless Areas	140	-	-	140
Scenic Roads	26	-	-	26
Total	34,737	99,000	173,800	307,537



SC00000-02

11

SUBREGION 11 - PUGET SOUND^{1/}

PRESENT STATUS

The Recreation Setting

Bounded by Canada, the Cascades, the Olympics, and the Nisqually-Chehalis Divide, the Puget Sound Subregion contains natural features that provide almost every form of outdoor recreation opportunity a recreationist would desire. Elevations range from sea level to over 14,000 feet. Lakes, streams, and alpine scenery abound.

The subregion characteristics appear in four geographic categories--the Olympic Mountains, Shoreline Fringe, Cascade Mountains, and Puget Sound. Each category contains visual, biologic, and ecologic qualities manifest within itself. Perhaps the most outstanding is the Puget Sound itself which forms an inland sea containing many beautiful islands and encircled by forests, tidelands, and bluffs. Extreme contrast is afforded by the glacial landscape, volcanic peaks, dense lowland and intermediate forests, and alpine meadows of the mountain sectors and the urban development of the shoreline fringe. By and large, there exists an environment emotionally exciting and visually pleasing and worthy of preservation.

Important segments of American history such as the periods of exploration and fur trade, boundary dispute and settlement, statehood, and industrial development left marks on the subregion. Relics and sites of these periods commemorate and illustrate the heritage, remain a source for scholars, offer educational and cultural encounters, and may provide esthetic assets to their immediate surroundings. San Juan Island National Historical Park; Port Gamble Historic District, a Registered National Historical Landmark; and State Historical Parks, Old Fort Townsend, Fort Casey, and Fort Flagler, illustrate the resources in this category. Other sites, many requiring identification in the subregion, offer similar opportunity for preservation and interpretation.

^{1/} In the Type 2 Puget Sound & Adjacent Waters Study, based on earlier data, methodology and population projections were somewhat different from those developed in the C-NP Study. Consequently study results are not the same. Significant differences are included for comparison by footnote in this subregional narrative.

In spite of its relatively long settlement by Anglo-Americans, the archeology of the Puget Sound Subregion is still in its beginning stages. Most of the work has been concentrated in the San Juan Islands and in the lower Skagit Basin. Although only one language family was represented ethnographically (Salishan), excavations have revealed a variety of prehistoric cultural expressions both in the islands and on the mainland. Systematic reconnaissance and excavation programs are needed in the following sectors of the subregion before the full archeological potential can be assessed: (a) river valleys and salt water littoral of the northern, central, and southern mainland; (b) the shores of the Hood Canal; (c) river valleys draining east from the Olympic Peninsula; and (d) eastern part of the Strait of Juan de Fuca.

Hypothetically, we can expect that the prehistory of this subregion will prove to be quite complex, for it contains a variety of unique ecological settings which could have been impinged upon by coastal influences from the west, and by influences from the interior across the Cascades to the east. Because of the high and increasing modern population pressures, there is a great urgency for developing a systematic, comprehensive program for the subregion.

The subregion has a pleasant climate. Average precipitation ranges from about 17 inches annually in the San Juan Islands to about 200 inches in the Olympic Mountains. Generally, precipitation



A Puget Sound ferry ride is a major attraction to thousands of summer visitors. Scenic rides through the San Juan Islands are provided by daily service from Seattle and Anacortes. (Bureau of Outdoor Recreation Photo)

occurs during the fall and winter months, with heavy snows common at high elevations and rain in the lower areas. The subregion is characterized by cool summers and mild winters and offers cool climate relief between the urban areas and the recreation environment.

The 1960 population was 1.75 million. Most people live in the urban areas adjacent to the Sound. This urban area has become a great commercial center and a principal gateway to the Orient. It is a distribution center for a large variety of import products and supports an important manufacturing economy. Because of the population density and outstanding recreational environment, recreation and tourism rank high in the subregion's total economy.

The subregion has a well-developed rail, air, and road system. North-south routes connect the urban areas and tie into the cross-mountain routes in all directions. Extensive road systems provide ready access to the marine areas, the foothills, and the high mountains, offering the recreationist outstanding opportunity to participate in varied recreation opportunities. Ferries provide access across Puget Sound.

Available Outdoor Recreation Resources

Major Recreation Areas

Olympic National Park. This 1,400-square mile area, established in 1938, is located on the Olympic Peninsula. It contains mountain wilderness, rain forests, and seashores. Forty percent lies in this subregion.

Mount Rainier National Park. This 378-square mile area became the fifth national park in 1899. It is dominated by the 14,410-foot dormant volcanic mountain containing 26 named glaciers and many other ice and snow fields. It is the most superb landmark in the Pacific Northwest. The park offers a wide variety of recreation activities, including mountaineering, hiking, fishing, sight-seeing, camping, wildlife observation, nature study, and many others.

North Cascade National Park. Most of this recently established park lies within this subregion.

Paysaten Wilderness. Over 100,000 acres of this mountain area lie within the subregion.

Glacier Peak Wilderness. Established in 1960 by the Secretary of Agriculture and managed by the Forest Service, nearly 240,000 acres of this outstanding area in the heart of the North

Cascade Mountains is a scenic wonderland, accessible by trails and characterized by glacier-fed lakes, untouched plant life, jagged mountains, and abundant wildlife.

Mount Baker Recreation Area. Established by land classification order of the Secretary of Agriculture in 1926 setting up the Mount Baker Park Division of the Mount Baker National Forest, this area encompasses about 75,000 acres, offering excellent outdoor recreation opportunities both in winter and summer.

Winter Sports Area. The combination of heavy winter snow in the mountains and the population concentration of adjacent Puget Sound area makes winter sports one of the most rapidly expanding recreation activities. A total of six ski areas, primarily in the Cascade Mountains, receive heavy use. Some, like Mount Baker, also offer summertime recreation.

Puget Sound and adjacent fresh-water lakes make this sub-region the boating capital of the Northwest and one of the heaviest used ones in the United States. The many bays, islands, inlets, and sheltered waters offer almost unlimited opportunity for all types and sizes of boats. Puget Sound offers the finest scuba diving opportunities in the region.



Private ownership of waterfront precludes public use. A program to develop access points will offer the thousands of urban people a place to boat. (Bureau of Outdoor Recreation Photo)

Figure 43 is a map showing the location of the existing recreation resources of the subregion. Table 121 summarizes the major recreation resources of the region.

Table 121 - Major Recreation Resources In All Ownerships,
Subregion 11

Resource	Number	1,000	
		Surface Acres	Miles
Reservoirs over 5,000 acre-feet capacity	20	45.3	
Lakes and Other Slack Water	69	47.2	
Other Water			
Small		40.5	
Large		8.1	
Total Water Surface		141.1	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	6		166
Established Roadless Areas	2	507.1	
Established Scenic Roads			360

Source: Tables 1, 7, and 8

Existing Supply

Table 122 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appear in this table.

Table 122 - Acreage of Inventoried Lands by BOR Classes, Subregion 11, 1964^{1/}

Class	Federal ^{2/}	State	County	City	Private ^{3/}	Total
			(1,000 Acres)			
I	3.78	.03	0.33	3.80	-	7.94
II	11.03	3.85	1.31	1.47	-	17.66
III	2,070.44	641.01	2.29	3.48	-	2,717.22
IV	277.99	0.96	0.05	0.15	-	279.15
V	957.60	-	0.21	0.47	-	958.28
VI	1.75	.12	-	0.01	-	1.88
Total						
Classed	3,322.59	645.97	4.19	9.38	-	3,982.13
Not						
Classed	127.11	36.93	9.71	208.02	4,082.70	4,464.47
Grand						
Total ^{4/}	3,449.70	682.90	13.90	217.40	4,082.70	8,446.60

^{1/} BOR classes are described in the Regional Summary.

^{2/} Totals reflect reclassification subsequent to Type 2 Study.

^{3/} Includes Indian Reservation.

^{4/} From Appendix IV, Land and Mineral Resources.

Of the total public land and water inventoried in the region, this subregion contains about 5 percent of the land and 5 percent of the fresh water. It also contains over 1,500,000 acres of salt water surface. The salt water surface of Puget Sound is of extreme importance to recreation since it is located adjacent to the largest population concentration of the entire region. Fresh water bodies, such as Lake Washington, Lake Samish, and Lake Union, also provide recreation opportunities for resident population.

The recently established North Cascades National Park, Ross Lake and Lake Chelan National Recreation Areas, the Pasayton Wilderness, and the San Juan National Historical Park all have added to the opportunity of the subregion's residents to enjoy the outdoors. The programs of the local government agencies to acquire water frontage and beach areas have been very important to the total effort.

In addition to the salt water surface, there are an additional 141,100 acres of water. The supply includes 20 reservoirs containing over 5,000 acre-feet of capacity or more that have a combined surface of over 45,000 acres. A total of 360 miles of designated scenic roads is shown on figure 43.

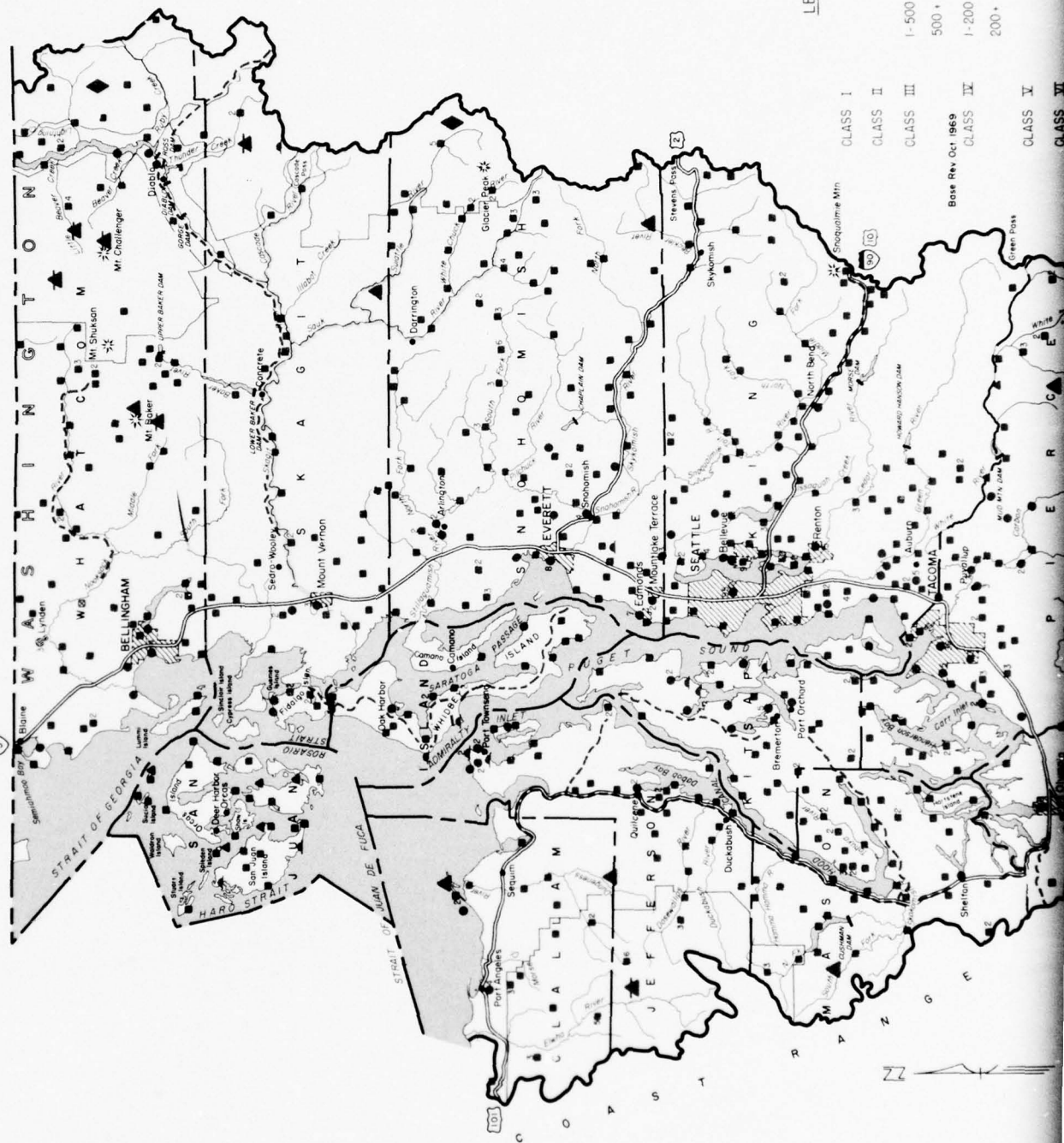
Table 123 lists reported information on the extent of recreation development. This list includes only those facilities for which information was available for all subregions. The Puget Sound and Adjacent Waters Study, Appendix X, Recreation, contains additional information.

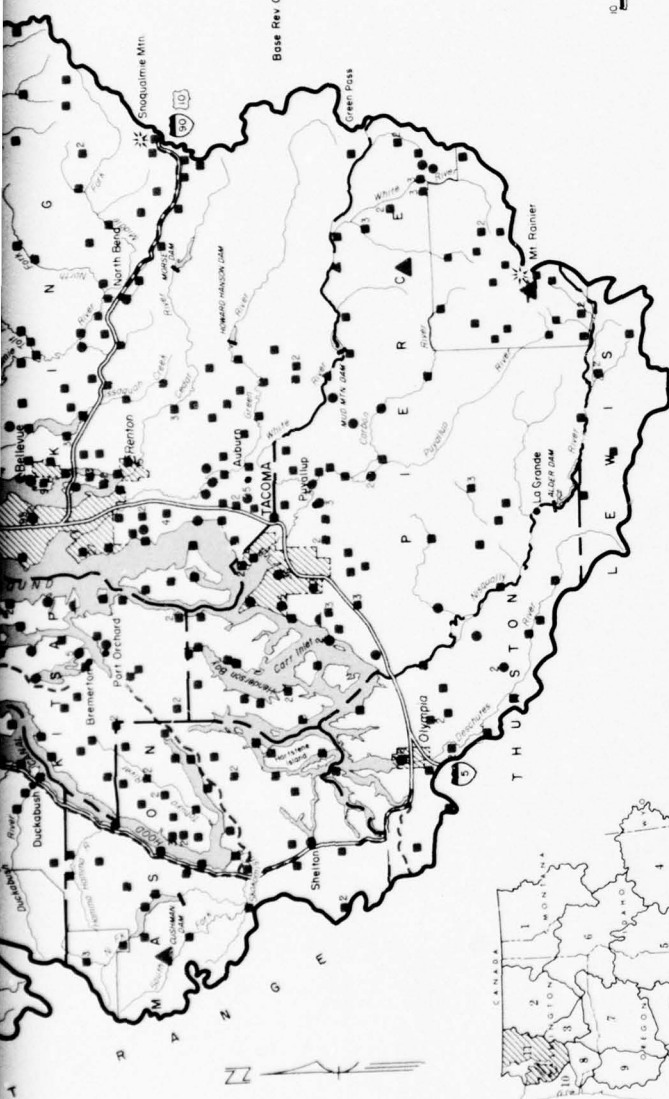
Private enterprise provides many recreational opportunities throughout the subregion, with primary emphasis on snow skiing and marina development. An inventory conducted by the National Association of Soil Conservation Districts shows a total of 479 private recreation enterprises in the subregion. A major part of the recreation use of some private areas relies on nearby public lands, especially those areas near recreational bodies of water. This is evidenced by the 175 enterprises which provide fishing in lakes, rivers, streams, and ponds. An estimate of 1965 supply of private facilities for recreation in this subregion is 9,380 acres comprised of 104 campgrounds and 56 picnic areas. A total of 48 golf courses is included in the supply of private facilities.

Primary concentration by private enterprise has been on the development of facilities including marinas, boat moorages, and private residential vacation properties. Commercial resorts supplying recreational beaches for the general public are notably few.

Recreational use of privately owned forest lands is one of the most recent outdoor recreation trends. Major timber companies are providing an increasing acreage of forest land for outdoor recreation. Most industrial tree-farm holdings are open to hunters.

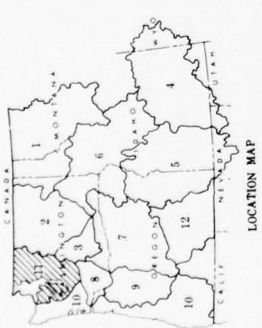
BRITISH COLUMBIA





LEGEND

- CLASS I
 - CLASS II
 - CLASS III
 - CLASS IV
 - CLASS V
 - CLASS VI
 - NATIONAL RIVERS Designated
 - To be studied
 - Identified
 - NATIONAL PARK, WILDERNESS, B
 - PRIMITIVE AREA BOUNDARIES
- Base Rev Oct 1969
- 1-500 Acres
- 500+ Acres
- 1-200 Acres
- 200+ Acres
- SCENIC ROUTES
- 0 10 20
SCALE IN MILES



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
EXISTING RECREATION AREAS
PUGET SOUND SUBREGION II

FIGURE 43 ²

Table 123 - Facility Development, Subregion 11

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	697	400	31	18	1,146	-	1,146
	Units	1,753	2,500	20	133	4,406	-	4,406
Trailer	Acres	581	34	8	4	427	-	427
	Units	679	340	28	44	1,091	898	1,989
Group	Acres	263	107	32	133	535	-	535
Picnicking	Acres	500	776	379	331	1,986	-	1,986
	Units	1,000	3,205	1,007	2,298	7,510	-	7,510
Marinas	Number	13	18	18	20	69	NA	69
	Slips	123	822	40	448	1,433	NA	1,433
Winter Sports	Number	7	1	-	-	8	-	8
	Lifts or Tows	81	7	-	-	88	-	88
Swimming Beaches (organized)	Acres	26	84	110	83	303	NA	303
Parks and Playgrounds	Number	11	9	33	147	200	-	200
	Acres	140	13	294	678	1,125	-	1,125

Dash (-) Not reported. NA - Not available.

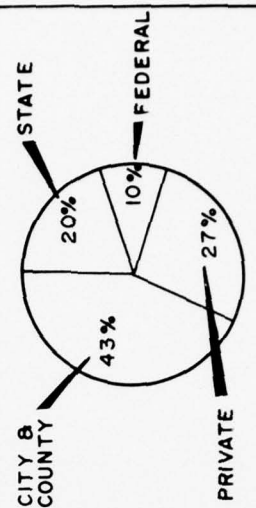
Nonprofit private organizations such as the Nature Conservancy and youth, church, and civic organizations also contribute significantly to the recreation supply. Many carry out conservation programs for the public organizations such as the YMCA, Boy Scouts, Girl Scouts, Campfire Girls, and church groups that operate resident and day camps.

Use of Recreation Resources

Table 124 lists the reported and calculated visitation to recreation sites in the Puget Sound Subregion. About one-fourth of the total visits were to private enterprises as estimated by the Chilton Report on Private Outdoor Recreation Enterprises. (3) The data on visitation to public facilities were supplied by the agencies as listed. The 1965 attendance to the subregion represents about 26 percent of the entire region and reflects, to a degree, the influence of a large population concentration on the close-by resources. Almost 31 percent of all boating activities occurred in this subregion, which also indicates the influence of extensive boating opportunity located in the area.

Table 124 - Recreation Use, Subregion 11, 1965

Land Administering Agency	Swim- ming	Boat- ing	Water Skiing	Fishing	Camping (1,000 Recreation Days)	Picnick- ing Sight- seeing Days	Winter Hunt- Sports	Other	Total
Forest Service				175	175	135	580	85	1,660
Bureau of Land Management									
Bureau of Reclamation	58	119	35	49	67	296	11	152	1,970
National Park Service						5			1,080
Corps of Engineers									
Bureau of Sport Fishes & Wildlife									
Other Federal	1,224	336	212	25	1	12		2	40
State Agencies	2,399	651	67	1,075	482	2,564	50	973	9,706
County and Municipal				508	236	7,024	1	8,373	20,802
Private	1,208	344	97	1,872	306	2,011	462	3,325	12,901
Total	4,889	1,450	411	3,704	1,267	13,300	641	12,910	48,159



Value of Outdoor Recreation and Tourism

The Puget Sound Subregion provides the greatest recreation use of all subregions in the Columbia-North Pacific Region. A favorable combination of natural features and climate provides many and varied recreation opportunities for this heaviest populated subregion.

The value of outdoor recreation and tourism to this subregion is indicated by recreation expenditures (22) of \$232 million by tourists and \$119 million by nontourists for a total of \$351 million. These expenditures represent the equivalent of 39,000 employees.

A heavy investment has been made in providing facilities to accommodate the large crowds. The private interests have been concentrated primarily toward motels, lodges, ski areas, and deluxe marinas. The public investments have been in providing the basic facilities such as camping and picnicking units, trails, boat-launching ramps, and sanitary facilities.

FUTURE DEMAND

The most important factor used in estimating future outdoor recreation demand is population. The two aspects of population that have the greatest impact on demand are numerical growth and distribution.

Population is projected to more than double in this subregion by the year 2020. The distribution of this population is not expected to change significantly from the present pattern.

The demand projections available in the completed Type 2 Study for the Puget Sound Subregion are somewhat higher than those obtained by using the same methodology and socio-economic forecasts as used in the Columbia-North Pacific Study for the other subregions. The methodology used to estimate recreation demand in the Type 2 Study is more detailed than that used for the Columbia-North Pacific Study, but it is also significant that the population projection in the Type 2 Study for 2020 is 6.8 million, while the population projection used which was provided by the Water Resources Council for 2020 is 4.4 million.

The future population of the subregion is projected to increase from 33 percent of the region in 1970 to 35 percent by the year 2020. This trend of urbanization is typical of both the Nation and the region.

According to the Type 2 projections, the demand for outdoor recreation will increase nearly six times by the year 2020. The outdoor recreation participation rate for people living in and near urban areas is high. Population increases in urban and metropolitan areas will concentrate recreation demand in these areas.

Puget Sound differs significantly from most subregions and from the Nation in respect to the availability and convenience of outstanding recreation resources. Evidence of the effects of the excellent opportunity to engage in outdoor recreation is reflected in the high per capita rates in participation and boat ownership for the residents of the Puget Sound Subregion. A recent pleasure boating study prepared by the Seattle District, Corps of Engineers, and the Pacific Northwest Region, Bureau of Outdoor Recreation, reveals that this subregion has an estimated 186,000 pleasure craft or 94 boats per thousand population compared to the 40.8 nationwide rate. Total boat ownership is expected to increase to 1,037,000 by the year 2020 or about 225 boats per thousand population. Other information on boating needs is based on the boating study.

The Puget Sound Subregion attracts a great number of non-residents each year. The attraction of the recreation resource of Puget Sound and the San Juan Islands for fishing, boating, and vacation is evidenced each summer. Many Canadians living in the vicinity of Vancouver, B.C. make several trips each year to the Seattle-Tacoma area. Puget Sound is the terminus for several trans-continental highways that carry thousands of tourists each summer. Large spectator events such as the annual hydroplane races, boat shows, and athletic events draw many nonresidents to the area. Major league status for several professional sports is an important attraction that enhances the general tourist industry. On a state-wide basis, nonresidents account for about 19 percent of the total recreation demand.

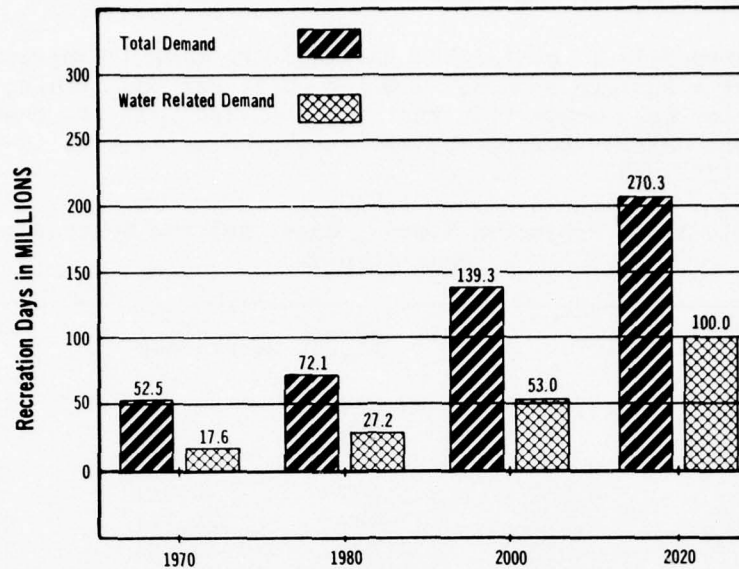


FIGURE 44 Expected Growth of Recreation Demand Subregion 11

The demand for outdoor recreation, computed the same as other subregions and using the population projections provided by the Water Resources Council, is shown in figure 44.^{1/}

^{1/} In the Puget Sound & Adjacent Waters Type 2 Study, the recreation demand was computed by using the information regarding population, income, and other economic factors included in the economic base study. The population base exceeds the Water Resources Council estimates by 250,000 in 1980, 955,000 in 2000, and 2.4 million by 2020. Recreation demand calculations for the Type 2 Study were based on the following three steps.

- a. Determination of participating population.
- b. Selection of both metropolitan and nonmetropolitan participation rates.
- c. Determining existing and future demand by multiplying a x b.

The results of these calculations are as follows:

(Million recreation days)

	1960	1980	2000	2020
Water Related	25.2	50.1	96.4	178.7
Non-Water Related	32.5	59.0	107.7	190.7
Total	57.7	109.1	204.1	369.4

Water-related activities include both those requiring actual water surface such as swimming, boating, and fishing in addition to those activities that occur on land but are enhanced by adjacent water. Demand for water-related activities is shown in table 125.

Table 125 - Projected Demand, Water Related Recreation
Subregion 11

Activity	1970	1980	2000	2020
		(1,000 Occasions)		
Boating	14,000	21,731	43,142	85,535
Water Skiing	599	950	1,894	3,578
Swimming	4,426	7,025	13,998	26,448
Fishing	3,962	5,147	6,851	8,889
Sightseeing	7,525	11,942	23,797	44,962
Picnicking	5,963	9,462	18,856	35,627
Camping	3,906	6,198	12,351	23,336
Other ^{1/}	3,619	5,749	11,411	21,625
Total	44,000	68,200	132,300	250,000
Recreation Days ^{2/}	17,600	27,280	52,920	100,000

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day rounded.

Type 2 Study				
Recreation Days	-	46,800	96,000	177,600

OUTDOOR RECREATION NEEDS

Comparison between the 1970 recreation demand (52.5 million recreation days) and the projected 1970 use (49.2 million recreation days) indicates that a major share of the subregional demand is being met at existing developed areas. Figure 45 shows the need for recreation facility development for both water related and total demand to be met by the target dates.^{1/}

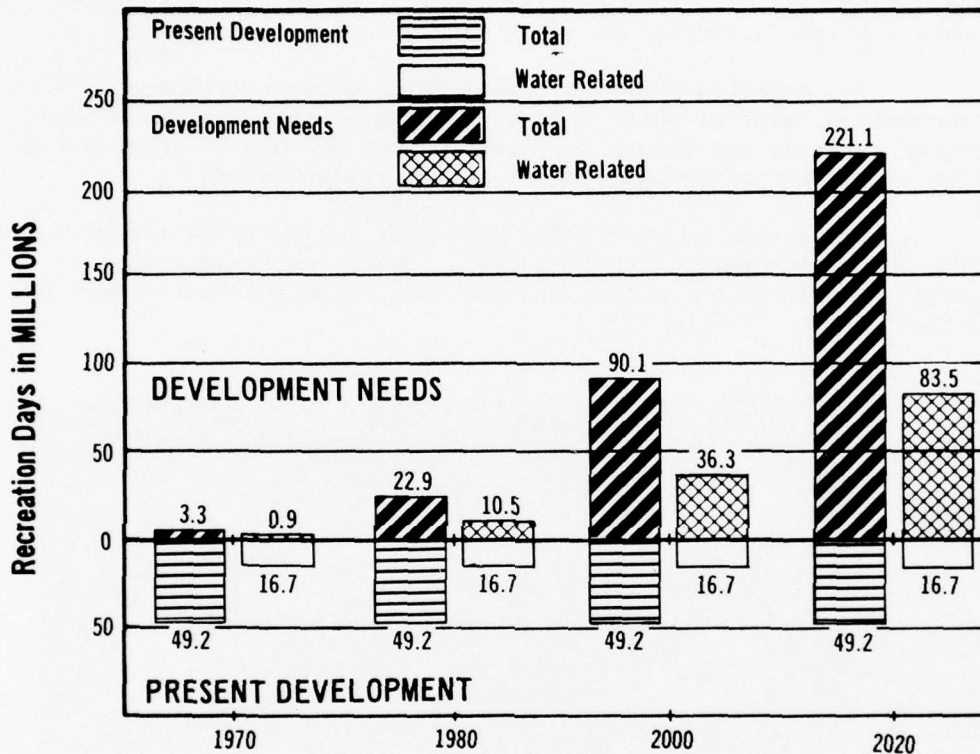


FIGURE 45 Need for Recreation Facility Development Subregion 11

^{1/} Projected development needs from the Type 2 Puget Sound & Adjacent Waters report are as follows:

	1960	1980	2000	2020
	(1,000 Recreation Days)			
Water Related	8,170	33,090	77,390	161,690
Nonwater Related	16,548	43,048	91,748	174,748
Total	24,718	76,138	169,138	336,438

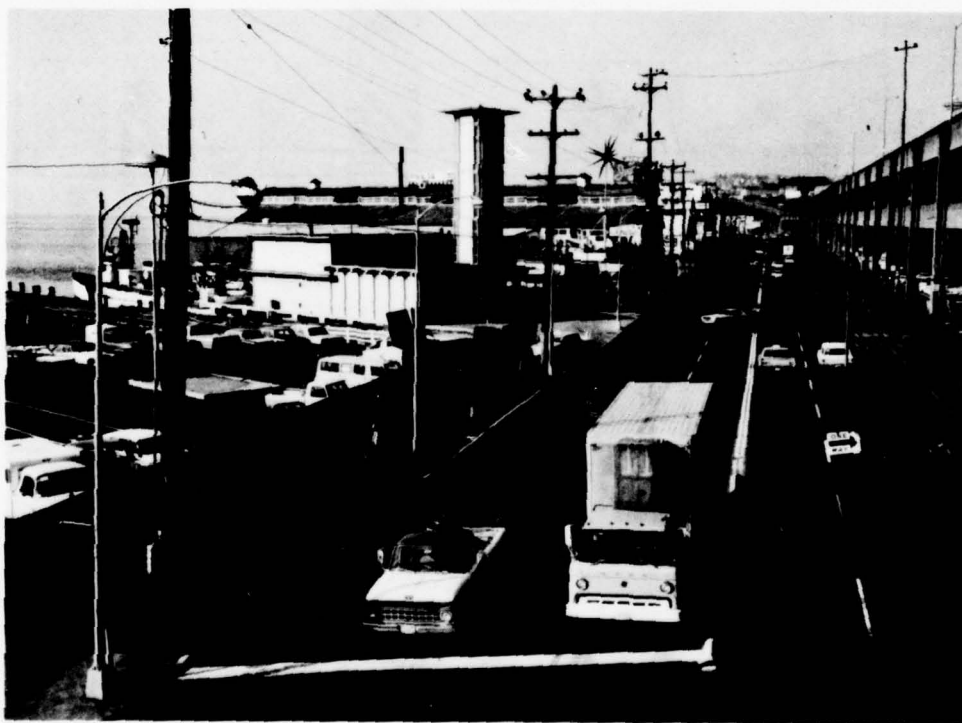
MEANS TO SATISFY NEEDS

Protection of Resources

Water is essential for several types of recreation activities and adds to the enjoyment of several others. To be of benefit to recreation, the water should be of good quality. Therefore, to realize the benefits of recreation use of water, the need for protecting and, in many cases, enhancing the quality of the waters of the subregion is of primary importance.

The expected increase in all forms of water-related recreation, many of which compete with each other for use of the water surface, may create the need to zone the use of water bodies for the safety and protection of the recreation users.

There also is a need for a program to inventory and evaluate the underwater recreation resources. Unique underwater marine areas need to be identified and protected from possible danger by other uses.



*Urban waterfront areas could provide an excellent opportunity for recreation use if access can be provided. As can be noted in this photograph, the cost of acquisition would be extremely high.
(Bureau of Outdoor Recreation Photo)*

The free-flowing rivers of the subregion and the adjacent land possess recreation values of present and future benefit to the public. These areas contain outstanding scenic, fish, wildlife, geological, botanical historic, archeological, and outdoor recreation values. The construction of dams and other impoundments in sections of the subregion rivers need to be complemented with free-flowing sections. The establishment of free-flowing rivers would preserve the natural setting, water quality, and fulfill other conservation purposes. Principal recreation streams in the Puget Sound Subregion are listed in table 126.

Table 126 - Principal Recreation Streams, Subregion 11

Description	Miles	Acres at 320/mile
<u>Rivers Designated for Study in the Wild and Scenic Rivers Act (P.L. 90-542 Sec. 5(a))</u>		
Skagit River - main stem from town of Mount Vernon to and including the mouth of Bacon Creek	67	21,440
Cascade River - from confluence with Skagit River to the junction of its North and South Forks	19	6,080
South Fork - to the boundary of Glacier Peak Wilderness	2	640
Suiattle River - from confluence with Sauk River to the Glacier Peak Wilderness boundary at Milk Creek	29	9,280
Sauk River - from confluence with the Skagit River to its junction with Elliott Creek	43	13,760
North Fork, Sauk River - from confluence with the South Fork of the Sauk to Glacier Peak Wilderness boundary	6	1,920
<u>Other</u>		
Baker River - from origin to confluence with the Skagit River	11	3,520
White Chuck River - from confluence with the Sauk River to Glacier Peak Wilderness boundary	16	5,120
Nisqually River - origin to Puget Sound	69	22,080
Green River - origin to eastern city limits of Auburn	54	17,280
Sammamish River - from Lake Sammamish to the eastern city limits of Bothel	13	4,160

Table 126, continued

Description	Miles	Acres at 320/mile
Skykomish River - origin to confluence with Sultan River	15	4,800
North Fork - origin to confluence with South Fork	24	7,680
South Fork - origin to confluence with North Fork	20	6,400
Wallace River - origin to confluence with Skykomish River	9	2,880
Beckler River - origin to confluence with Skykomish River	12	3,840
Miller River - origin to confluence with Skykomish River	10	3,200
Foss River - origin to confluence with Skykomish River	9	2,880
Tyee River - origin to confluence with Skykomish River	9	2,880
Pilchuck - origin to confluence with Skykomish River	36	11,520
Stillaguamish River, North Fork - origin to confluence with the South Fork	49	15,680
Deer Creek - origin to confluence with the North Fork	19	6,080
Boulder River - origin to confluence with North Fork	11	3,520
Squire Creek - origin to confluence with North Fork	5	1,600
South Fork - origin to confluence with North Fork	53	16,960
Jim Creek - origin to confluence with South Fork	15	4,800
Canyon Creek - North and South Forks origin to confluence with South Fork	14	4,480
Nooksack River - origin to Puget Sound	76	24,320
Middle Fork - origin to confluence with main stem	17	5,440.
South Fork - origin to confluence with main stem	38	12,160
Tolt River - from the junction of its forks to the confluence with the Snoqualmie River	9	2,880
Snoqualmie River		
South Fork - from the origin to the confluence with the North Fork	28	8,960
North Fork - from the origin to its confluence with the South Fork	26	8,320

Table 126, continued

Description	Miles	Acres at 320/mile
Cedar River - from city of Renton eastern limits to Chester Morse Lake	34	10,880
Skokomish River - main stem from junction of its forks to its mouth	9	2,880
North Fork - Lower Lake Cushman Dam to confluence with the South Fork	8	2,560
South Fork - origin to confluence with the North Fork	26	8,320
Hamma Hamma River - origin to mouth	18	5,760
Duckabush River - origin to mouth	21	6,720
Dosewallips River - Olympic National Park boundary to mouth	14	4,480
Big Quilcene River - origin to mouth	17	5,440
Dungeness River - origin to mouth	28	8,960
Morse Creek - Olympic National Park boundary to mouth	8	2,560
Total Miles Federal Study Rivers Section 5(a)	166	53,120
Total Miles Other Rivers	850	272,000
Subregion Total Miles and Land Acreage	1,016	325,120

In addition to the marine biological areas, there are numerous outstanding natural features which are worthy of preservation for recreation and scientific purposes. These unique features need to be protected from destruction or misuse. Lands presently in public ownership that have a potential for future recreation use need to be retained in such ownership and protected from non-conforming uses which might impair their usefulness. The scattered open spaces such as marshes, bogs, swamps, wooded tracts, flood plains, etc., located in or adjacent to the urban areas, are extremely important natural areas and are in need of protection from possible uses that would destroy their basic values.

Present use and future needs for water-related recreation activity occasions indicate deficiencies of public recreation lands and waters in the Puget Sound Subregion needs will be for:

1. Water access.
2. Public fresh and salt water beaches and shorelands.
3. Retention of all publicly owned tide and shorelands.
4. Recovery of water frontage and shorelands by relocating highways and railroads from these areas.
5. Zoning of water surface to eliminate conflicting use.

6. Zoning of land susceptible to natural hazard for uses adaptable to those hazards rather than for uses requiring large expenditures of public funds for protection from those hazards.
7. Zoning of lands for development that will cause the least destruction to the natural environment.

Figure 46 shows potential recreation development areas.

Development of the Resource

The development of the existing supply so it can support optimum use is also of high priority. The greatest need is with and near the large population concentration along Puget Sound. It will be necessary to undertake an extensive program to acquire either in fee or through easement the right to protect the natural values of the shoreline. The continual changes taking place along the urban waterfront are reducing the capacity for recreation use each year. Table 127 lists the requirements by activity.^{1/}

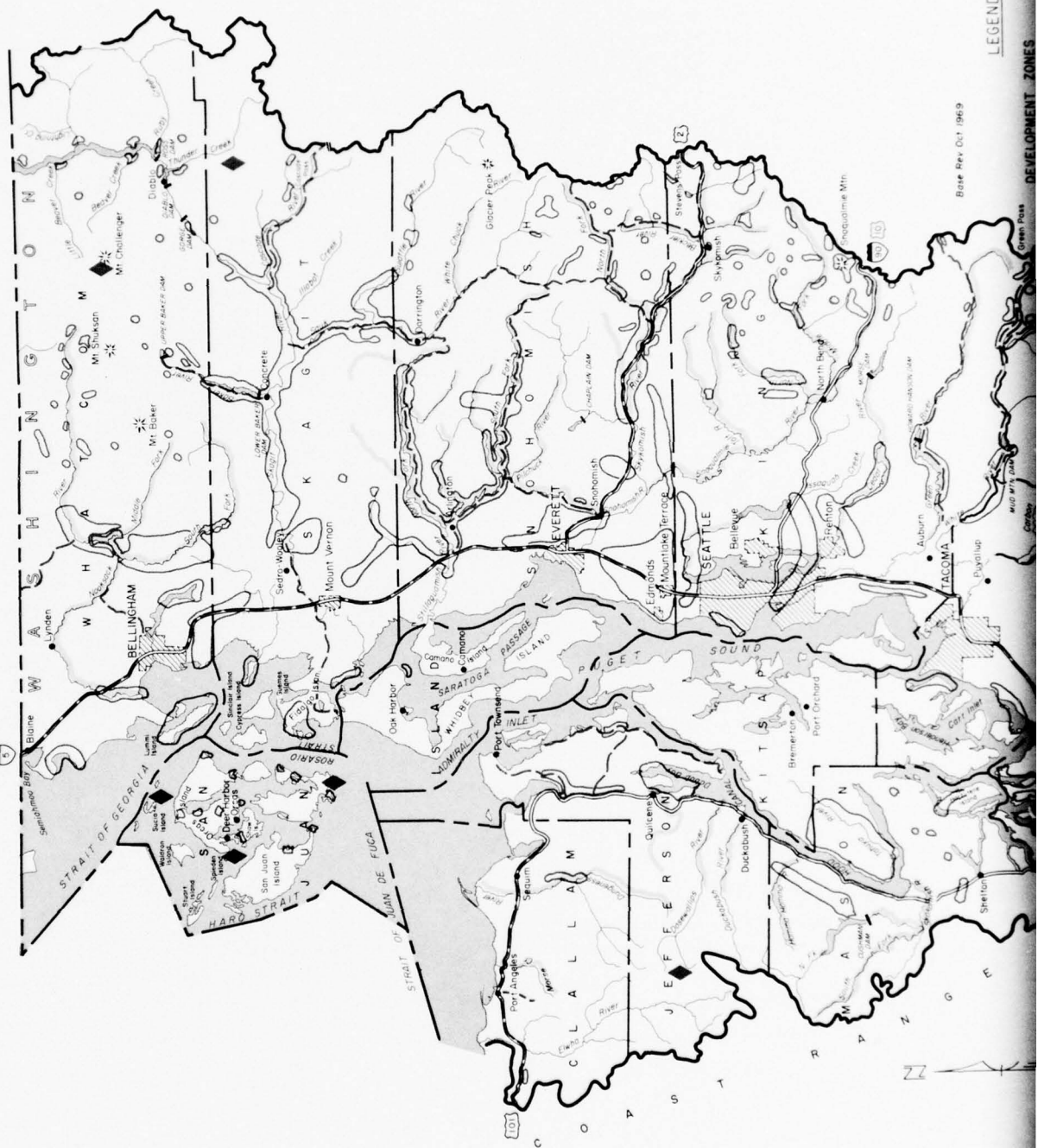
Table 127 - Land and Water Requirements for Water Related Demand,
Subregion 11

Activity	1970	1980	2000	2020
	(Acres)			
Camping and Picnicking				
Land	9,000	11,800	22,900	44,000
Water	18,000	23,600	45,800	88,000
Swimming (natural waters)				
Land	220	279	484	780
Water	670	890	1,800	3,500
Boating and Water Skiing				
Land	2,740	4,360	8,660	16,800
Water	139,500	219,000	440,300	828,400
Shoreside Hiking				
Land	1,200	1,600	3,100	5,900
Water (not determined)				
Total Land (Rounded)	13,160	18,039	35,144	67,480
Total Water (Rounded)	158,170	243,490	487,940	919,000

^{1/} The Puget Sound and Adjacent Waters Type 2 report lists the following requirements:

	1980	2000	2020
Total Land	13,485	26,340	50,695
Total Water	568,945	1,204,000	2,416,175

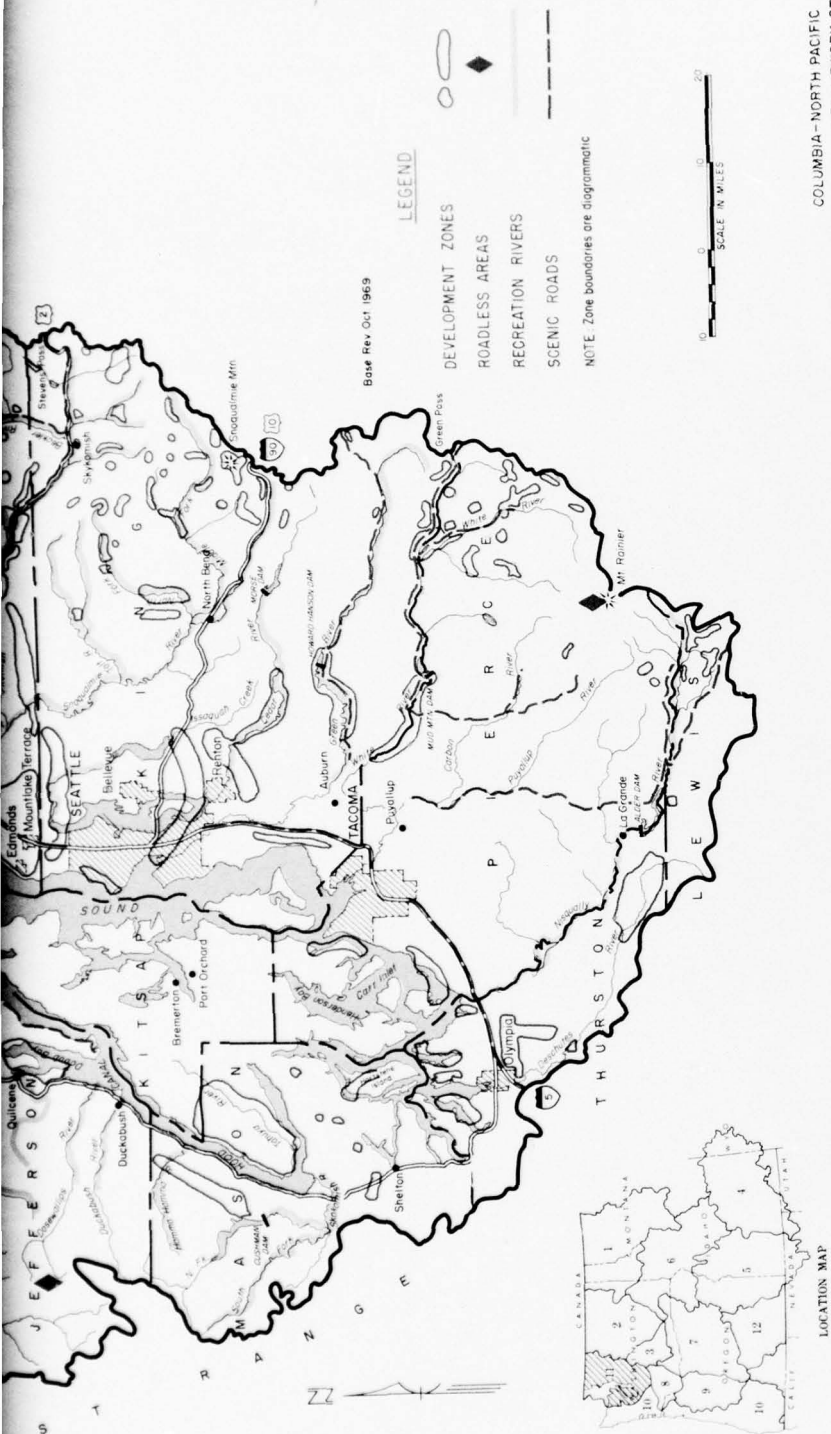
B R I T I S H C O L U M B I A



Base Rev. Oct. 1969

LEGEND

DEVELOPMENT ZONES



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**POTENTIAL
RECREATION AREAS**
PUGET SOUND SUBREGION II

FIGURE 46

2

Table 128 contains an estimate of the acquisition and development needs by level of administration.

Activity Development Needs

The following discussion considers the water-related recreation needs as viewed from specific activities.

Swimming

Areawise, there is an adequate supply of beaches to satisfy swimming needs until the year 1980. However, there are existing deficiencies in two local areas, and there may be localized deficiencies within urban areas. To satisfy swimming needs by year 2020, 1,200 acres of beaches need to be made available for public use.

In urbanized areas where the need for swimming is the greatest, swimming pools are a practical solution to satisfy demand. Pools are in short supply throughout most of the subregion.

The impact of privately owned beaches and pools not available to the public was not considered or determined.

Boating

In 1966, there were 94 boats per 1,000. Approximately 180,000 of the estimated 223,000 private pleasure boats in the State are owned by the residents of Puget Sound Subregion. In addition, at least 30 percent of the Washington boat owners living outside the subregion, plus many out-of-state residents, bring their craft into the area.

Of the pleasure boats owned within the subregion, about 50 percent are canoes, prams, open skifs, rowboats, etc.; 10 percent are inboards; and 4 percent are sailboats.

Table 129 lists the estimated number and types of boats for the target years.

Table 128 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 11

	(1) Land/ Inventory BOR I & II (1,000 Acres)	(2) Existing2/ Facility Development (1,000 Acres)	(3) Water Related3/ Development Needs		(4) Land Acquisition Needs (1,000 Acres)		(5) Facility Development Needs				
			1980	2020	1980	2020	1980	2020			
Federal	13.3	1.7	1.5	2.8	5.4	-	-	-	1.1	3.7	
State	3.0	1.1	5.6	10.9	21.1	2.6	7.9	18.1	4.5	9.8	20.0
County and Municipal	1.5	0.5	7.4	14.5	27.8	5.9	13.0	26.3	6.9	14.0	27.3
Private	0.2	0.2	3.6	7.1	13.6	-	-	-	3.4	6.9	13.4
Total	18.0	3.5	18.1	35.3	67.9	8.5	20.9	44.4	14.8	31.8	64.4

1/ Data from table 122. (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

2/ Data from table 123. (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

3/ Data from figure 45.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Table 129 - Pleasure Boats and Projections^{1/}, Subregion 11

Item	1970	1980	2000	2020
Trailered	130,000	203,500	377,500	708,500
Car Top	13,000	20,500	40,500	77,500
Moored	35,500	55,500	110,000	210,000
Stored	7,500	11,500	23,000	44,000
Total	186,000	291,000	551,000	1,040,000

^{1/} Based on preliminary data from Pleasure Boating Study, Puget Sound and Adjacent Waters, State of Washington, November 1968.

On the basis of the above information, the estimated number of lanes of boat-launching ramps required to accommodate the pleasure boats is as follows:

1970	1980	2000	2020
325	400	750	1,350

The need for additional permanent summer rental moorages between now and 1980 is expected to be 41,500 and increase by another 46,700 by the year 2000 and another 81,100 by the year 2020.

In terms of land and water needs to accommodate the expected boat use in the future, there is an adequate supply of water to satisfy boating demands at least until the year 2000. However, the location of all surface water is not the most ideal; but, due to the mobility factor, locational deficiencies are offset.

About 4,360 acres of land will be needed by 1980, 8,660 by the year 2000, and 16,800 by 2020 to support the boat-launching facilities planned.

Most pleasure boating takes place on the lakes and on salt water. A great potential for river boating exists, and this type of boating is expected to increase. Selected rivers with significant recreation values need to be maintained in their free-flowing state for boating and other recreational uses.

Camping and Picnicking

Between now and 1980, there will be a need to increase the acreage of picnic areas and campgrounds to 9,000 acres to meet the expected demand for this activity. Adjacent water in the form of lakes, reservoirs, or salt water greatly enhances the camping experience. Based on the projections, 11,000 acres of campgrounds

will be needed between 1980 and the year 2000, and 21,000 acres between the years 2000 and 2020.

Hiking

Areawide, and only considering existing trails in the national forests, there are enough trails to satisfy hiking demands until the year 1980. There may be a need for trails in the urban areas in both the immediate and long-range time periods. By the year 2000, about 3,100 miles will be needed and, by 2020, the need will grow another 2,800 miles. Trails located adjacent to bodies of water or that provide access to water are the most popular.

Driving for Pleasure and Sightseeing

Although not considered among water-related activities, driving for pleasure and sightseeing are greatly enhanced by the abundance of water within the study area.

Travel is a necessary ingredient of outdoor recreation. Although weather conditions are an influence, driving for pleasure and sightseeing may take place during any season. Sightseeing ranges in intensity from the casual viewing of natural or manmade features to the rather detailed study of specific elements. As might be expected, casual sightseers are in the majority.

Since driving for pleasure and sightseeing do not necessarily occur on lands dedicated to recreation, a specific analysis of needs has been excluded from this study. The following discussion will identify some general requirements associated with the activities.

Roads and highways, viewpoints, and wayside rest areas are the basic requirements for the motoring recreationist. There is a shortage of wayside facilities throughout the study area. Since the most recreation travel takes place on a daily basis, facilities within a day-use range of urban areas need to be developed first.

A system of scenic routes, primary and secondary, urban and rural, needs to be designated. Additional roads are needed to provide access to recreation attractions or to provide a greater diversity in travel routes.

Winter Sports

The Puget Sound and Adjacent Waters Study did not include winter sports so information on activity needs is not available for this subregion. Winter sports are becoming more popular so the demand is increasing. There are several ski areas within day use of the major concentrations of population. Facilities are becoming crowded, and new ski and winter sports areas will be needed in the future.

At the present rate of increase in winter sports, it is expected that the capacity of the ski lifts and acreage will need to be increased at least 5 times by year 2020.

COST OF RECREATION PROGRAMS

To provide the needed facilities, access, lands, and attendant programs to accommodate the projected demand will require a substantial increase in the budgets of all recreation-administering agencies.

Based on the same approach as other subregions at \$4.15 per recreation day for capital investment and \$0.25 per day for OM&R, the estimated costs are listed in table 130.1/

1/ The Puget Sound and Adjacent Waters Type 2 Study lists the following costs:

<u>1960-1980</u>	<u>1980-2000</u>	<u>2001-2020</u>	<u>Total</u>
	(\$1,000)		
368,704	458,700	764,440	1,591,844

The annual operation and maintenance at the target years is shown below:

<u>1980</u>	<u>2000</u>	<u>2020</u>
	(\$1,000)	
7,238	8,686	13,752

Table 130 - Development and Study Costs of Recreation Programs
Subregion 11

Item	1970-1980	1981-2000	2001-2020	Total
		(\$1,000)		
Development Costs				
Investment	43,575	107,070	195,050	345,695
Annual OM&R	2,625	6,450	11,750	20,825
Study Costs				
Free-Flowing Rivers	1,104	-	-	1,104
Roadless Areas	464	-	-	464
Scenic Roads	18	-	-	18
Total	47,786	113,520	206,800	368,106



LOCATION MAP

SCBRC-02

12

SUBREGION 12 - OREGON CLOSED BASIN

PRESENT STATUS

The Recreation Setting

The subregion has an area of nearly 18,000 square miles and is all within the State of Oregon. It has no outlet to the sea and therefore is appropriately called the Oregon Closed Basin. This is a part of the Lahonton Basin which extends into Nevada and California. It is high desert country with elevations from 4,000 feet to 9,700 feet. The outstanding features are a number of picturesque lakes which are remnants of much larger lakes that existed during glacial times, often bordered by spectacular fault-block mountains. The most prominent examples are Lake Abert and Abert Rim, Summer Lake and Winter Ridge, Warner Lakes and Hart Mountain, and Malheur Lake and Steens Mountain. The Steens Mountain area is shown in the following photograph.



Steens Mountain attains a maximum height of 9,000 feet above the floor of Alvord Valley, which itself is 4,000 feet above sea level. The mountain has a length of more than 40 miles and is a prominent landmark of Subregion 12. (Oregon State Highway Department photo)

The climate is cold in winter, usually hot and dry in summer, but pleasant in the fall. The average precipitation, mostly in the form of snow or spring rains, varies from 6 inches in some valleys to 25 inches on some mountain tops. The sun shines most of the time, and the air is crystal clear.

There is a fringe of ponderosa pine timberland along the western and northern edges of the subregion; otherwise, it is mostly sagebrush, juniper, grasslands, lava outcrops, and old lakebeds. There are many mule deer, and a large herd of pronghorn antelope roams the area. Bighorn sheep have been restored to their native habitat on Hart and Steens Mountains. Vast flocks of ducks, geese, and other water birds frequent Malheur, Warner, Summer, and other lakes in the subregion. Chukar partridge and sage grouse are common. Opportunities for hunting, fishing, bird watching, color photography, horseback riding, rock collecting, and wilderness experience, and study of Indian culture, and history of the livestock industry are outstanding.

Total population of the subregion in 1965 was about 13,900. The only population center is Burns, which is the Harney County Seat and had 4,000 residents in 1960. The remainder of the population lives on widely scattered, colorful ranches. Lakeview, which has a population of 3,200, is located in the California region and is the only city immediately adjacent to Subregion 12.

This subregion is still part of the Old West. When Peter Skene Ogden visited the area in the 1820's there were numerous Paiute Indians in Harney Valley. The first permanent white settler was John Devine in 1868. After the Bannock Indian outbreak in 1878, the livestock industry moved in. Peter French, Henry Miller, John Devine, David Shirk, and Bill Hanley got land and developed large cattle ranches. A colorful but mostly unsuccessful homestead era followed. Many abandoned buildings of early attempts at settlement are slowly weathering in the desert sun. Prior to the Taylor Grazing Act in 1934, large nomadic bands of sheep and numerous semiwild horses roamed the area. Now it is cattle country.

The subregion is served by five surfaced highways supplemented by many gravel or dirt roads. Rail and air service is minimal. Vast areas are roadless.

The best known archeological site in this subregion is Baggerheel Cave in Fort Rock Valley which produced a large number of sagebrush bark sandals, one of which has been dated by radiocarbon analysis at about 7,000 B.C. Subsequent excavations have revealed the fact that this cave may have been occupied 13,200 years ago. The cave has been designated a National Historic Landmark.

It now appears that major population centers existed along the lakeshores which differs from earlier thinking that only small nomadic bands used this area. The major problem for archeological researches in this area is the rapid disappearance of sites due to activities of many "amateur archeologists" interested only in collecting specimens for personal use.

Available Outdoor Recreation Resources

Major Recreation Areas

Steens Mountain. This half-million-acre fault-block area reaches a maximum elevation of 9,720 feet. It is the highest point in Oregon accessible by automobile. Its outstanding features are glaciated gorges radiating down to the desert, primitive environment, viewpoints, wildlife, and plant ecology.

Malheur National Wildlife Refuge. This 181,000-acre refuge is primarily for waterbirds. It lies at the north end of Steens Mountain where most of the water for its marshes originates, primarily via the Blitzen River. Millions of birds nest at the refuge or stop during migrations. About 248 species have been recorded. It is one of the best bird watching places in the United States and is one of the Nation's principal "duck factories."

Hart Mountain and adjacent Warner Lakes. This half-million-acre area includes a national antelope refuge. Outstanding features are the Warner Valley chain of lakes overlooked by the Hart Mountain escarpment 4,000 feet above. Wildlife observations, geology, and hunting in season are special attractions. Antelope are shown in the photograph on page 300.

Abert Rim and adjacent Abert Lake of nearly 70 square miles. The outstanding features are the scenery and geology.

Summer Lake and adjacent Winter Ridge. Outstanding features are wildlife and scenery.

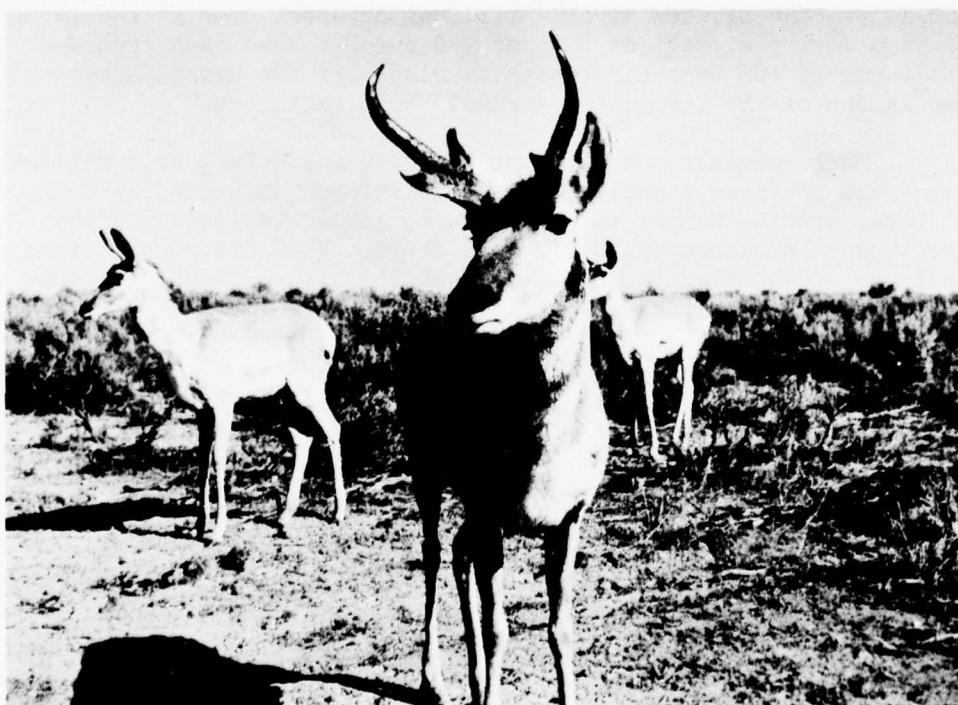
Gearhart Mountain Wilderness. An area of spectacular mountain scenery and rock palisades of which 5,000 acres are in the subregion.

Table 131 summarizes the recreation resources.

Table 131 - Major Recreation Resources in All Ownerships,
Subregion 12

Resource	Number	1,000 Acres	Miles
Reservoirs over 5,000 acre-feet capacity	1	2.9	
Lakes and Other Slack Water	13	152.2	
Other Water			
Small		8.7	
Large		0.1	
Total Water Surface		163.9	
Recreation Rivers Designated by P.L. 90-542			
Established Rivers	-		-
Study Rivers	-		-
Established Roadless Areas	1	5.0	
Established Scenic Roads			310

Source: Tables 1, 7, and 8.



Visiting camera bugs may easily get closeup pictures of antelope during the spring in Malheur National Wildlife Refuge in southeast Oregon. Hundreds of different types of birds also make their part-time home in the Refuge. (Oregon State Highway Department photo)

The Oregon Closed Basin contains about 6-1/2 percent of the land and 5-1/2 percent of the fresh water in the region available for recreational use. In 1960 there were about 1,200 acres of land per capita within the subregion. About 8 million acres of the Federal lands are classed as natural environment in BOR use Classes III, IV, and V. Nearly all of the lands administered by the Bureau of Land Management and the Forest Service have been classified for multiple-use management.

In addition to the recreation lands which have been classed, there is a total of 64,100 acres of water surface, including eight lakes and seven reservoirs. This water surface adds substantial opportunity to the potential of the region. Since all of the lakes are within closed basins, most of the waters are brackish. There are no existing or potential scenic or wild rivers. The principal streams such as the Silvies, Donner and Blitzen, Chewaucan, and Deep Creek are too small and erratic for recreational purposes other than fishing, camping, and picnicking.

Scenic roads, both dedicated and potential, are appealing. They are expected to attract substantially more tourist travel as road quality improves and the area becomes better known.

Existing Supply

Table 132 lists the inventoried acreage of land within this subregion used for or suitable for recreation. Acreages administered by various levels of government also appears in this table.

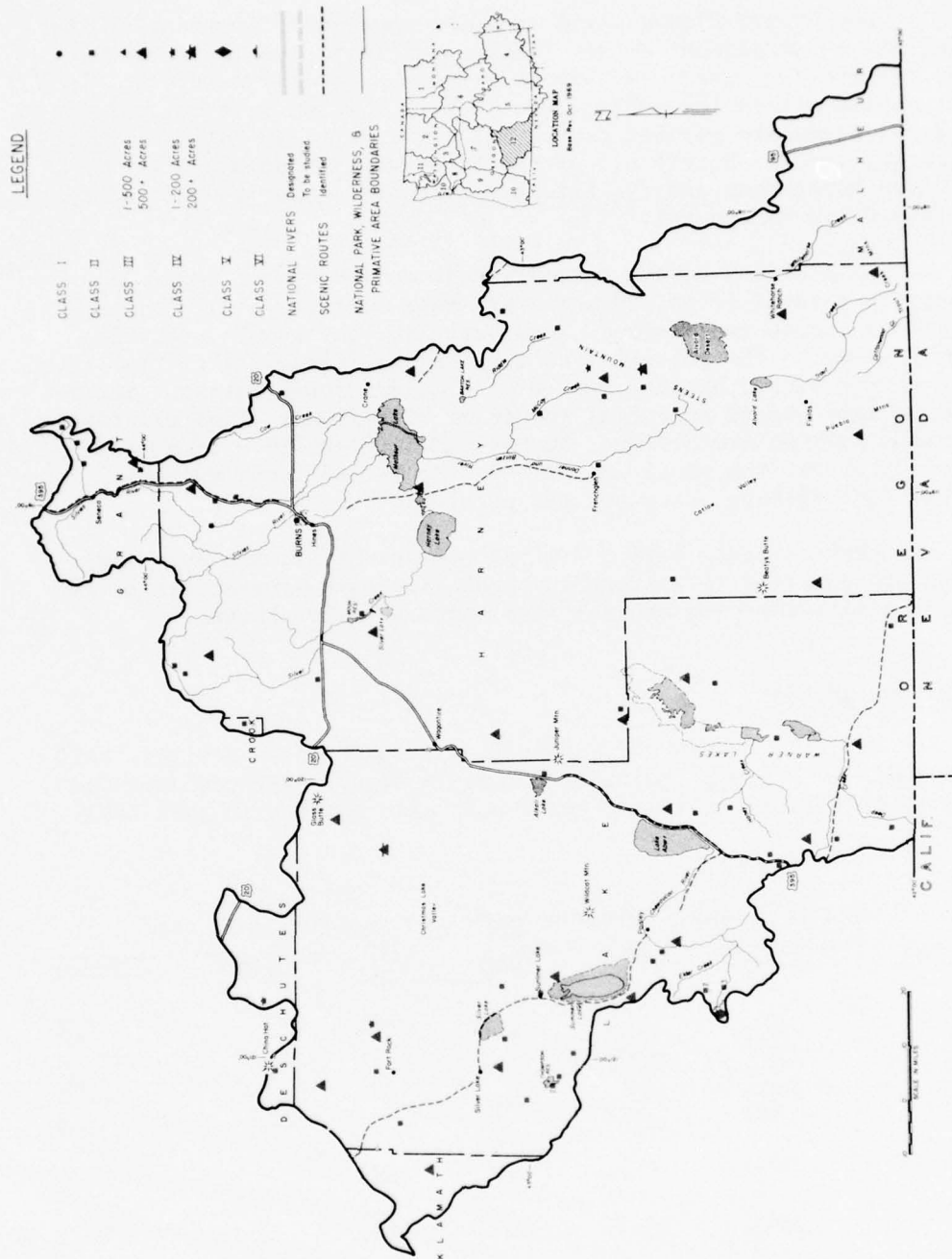
Table 132 - Acreage of Inventoried Lands by BOR Classes, Subregion 12, 1964^{1/}

Class	Federal	State	County (1,000 Acres)	City	Private ^{2/}	Total
I	-	-	-	0.02	-	0.02
II	0.72	1.09	0.80	-	-	2.61
III	7,841.59	17.32	-	-	-	7,858.91
IV	38.16	0.19	-	-	-	38.35
V	118.20	-	-	-	-	118.20
VI	0.01	-	-	-	-	0.01
Total						
Classed	7,998.68	18.60	0.80	0.02	-	8,018.10
Not						
Classed	283.12	311.40	2.80	0.48	2,778.90	3,376.70
Grand						
Total ^{3/}	8,281.80	330.00	3.60	0.50	2,778.90	11,394.80

^{1/} BOR classes are described in the Regional Summary.

^{2/} Includes Indian Reservation.

^{3/} From Appendix IV, Land and Mineral Resources.



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**EXISTING
RECREATION AREAS**
OREGON CLOSED BASIN
SUBREGION 12

FIGURE 47

The general location of existing recreation resources is shown in figure 47.

Table 133 lists reported information on the extent of recreation development. This list includes only those facilities for which information was uniformly available for all subregions. As this table shows, there has been very little recreation development. Heaviest recreational use occurs during the fall deer hunting season when hunters camp almost anywhere. Both Harney and Lake Counties have begun studies of the recreation resources within their borders. The State maintains one park at Fort Rock. A cave near Fort Rock was found to contain Indian artifacts 9,000 years old. The Steens Mountain Interagency Committee helps to prepare plans for preservation and development of appropriate portions of the Steens Mountain complex. Initial access roads have been constructed, and recreational facilities have been installed in the area. A similar committee is planning for the development of Warner Valley.

Table 133 - Facility Development, Subregion 12

Facility	Item	Federal	State	County	Municipal	Total Public	Private	Total
Camping								
Tent	Acres	157	3	-	-	160	-	160
	Units	249	15	-	-	264	-	264
Trailer	Acres	6	-	-	-	6	-	6
	Units	40	-	-	-	40	12	52
Group	Acres	12	-	-	-	12	-	12
Picnicking	Acres	168	5	-	3	176	-	176
	Units	102	41	-	7	150	-	150
Marinas	Number	-	-	-	-	-	NA	-
	Slips	-	-	-	-	-	NA	-
Winter Sports	Number	1	-	-	-	1	-	1
	Lifts or Tows	3	-	-	-	3	-	3
Swimming Beaches (Organized)	Acres	-	-	-	-	-	NA	-
Parks and Playgrounds	Number	-	-	-	-	-	-	-
	Acres	-	-	-	-	-	-	-

Dash (-) not reported

NA - Not Available

This subregion has nearly 3-million acres of private lands which are largely dedicated to agricultural purposes. Efforts are being made to change this trend, largely in connection with other land use. For example, the Park and Recreation District at Christmas Valley was created to serve the needs of a new subdivision. In the southern portion of the subregion, a small watershed project has been initiated which identifies recreation as a primary function of the proposal. Private recreational development in this subregion is largely confined to vacation-type activities associated with hunting and fishing. Most of the large ranches allow hunting and fishing either by invited guests or the general public.

Use of Recreation Resources

Table 134 lists the reported and calculated recreation visits to the Oregon Closed Basin Subregion in 1965. Over 50 percent of the visits were to Federal lands. Sightseeing and hunting were the most popular activities. The usage was very light considering the natural attractions available. However, a small subregion population, poor access, and very few recreation facilities limit the usage.

Value of Outdoor Recreation and Tourism

A review of the Bonneville Power Administration study of the recreation industry indicates that the subregion received \$4 million from tourists and \$1 million from nontourists for a total recreation expenditure of \$5 million. (22) These expenditures represent the equivalent of 600 full-time employees. Only a small part of the recreation and tourism potential of this subregion is utilized.

FUTURE DEMAND

The Oregon Closed Basin Subregion population is expected to increase from 13,900 in 1965 to 16,300 in 1980, and to 21,300 in 2020. Most of the increase will probably occur in Burns, the only city in the subregion. With other recreation areas becoming more crowded in the more heavily populated subregions, the demand for outdoor recreation in this subregion is expected to be as shown in figure 48.

The demand for outdoor recreation in the subregion is about 0.68 percent of that for the Columbia-North Pacific Region, while the resident population is 0.30 percent of the region's total.

The water related activities include both those requiring actual water surface, such as swimming, fishing, boating and water skiing in addition to those activities that occur on land but are enhanced when located near the water. Demand for water related activities is shown in table 135.

Table 134 - Recreation Use, Subregion 12, 1965

Land Administering Agency	Swim- ing	Boat- ing	Water Skiing	Fishing	Picnick- Sight- ing seeing (1,000 Recreation Days)			Hunting	Other	Total
					Camping	ing	Winter Sports			
Forest Service					15	15	35	55		190
Bureau of Land Management	3	8	4	60	19	35	1	48	30	425
National Park Service				51						
Corps of Engineers										
Bureau of Sport Fisheries & Wildlife				1			1	2	14	18
Other Federal	2			5	6	15	24	6	14	72
State Agencies	2			1		7	2		8	20
County and Municipal										
Private	2	3	1	11	13	24	96	47	24	221
Total	9	11	5	129	53	96	11	158	90	946

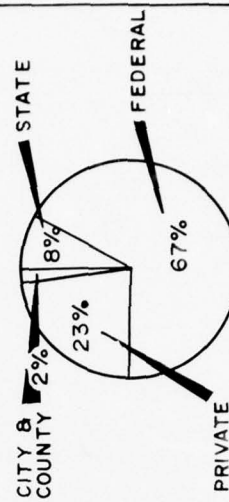


Table 135 - Projected Demand, Water Related Recreation
Subregion 12

Activity	1970	1980 (1,000 Occasions)	2000	2020
Boating	50	100	200	350
Water Skiing	18	33	70	132
Swimming	137	242	521	976
Fishing	146	179	237	310
Sightseeing	232	411	885	1,659
Picnicking	184	325	701	1,314
Camping	121	212	460	861
Other ^{1/}	112	198	426	798
Total	1,000	1,700	3,500	6,400
Recreation Days ^{2/}	400	700	1,400	2,600

^{1/} Other activities include nature walks, photography, wildlife observation, etc.

^{2/} Based on 2.5 activities per day, rounded.

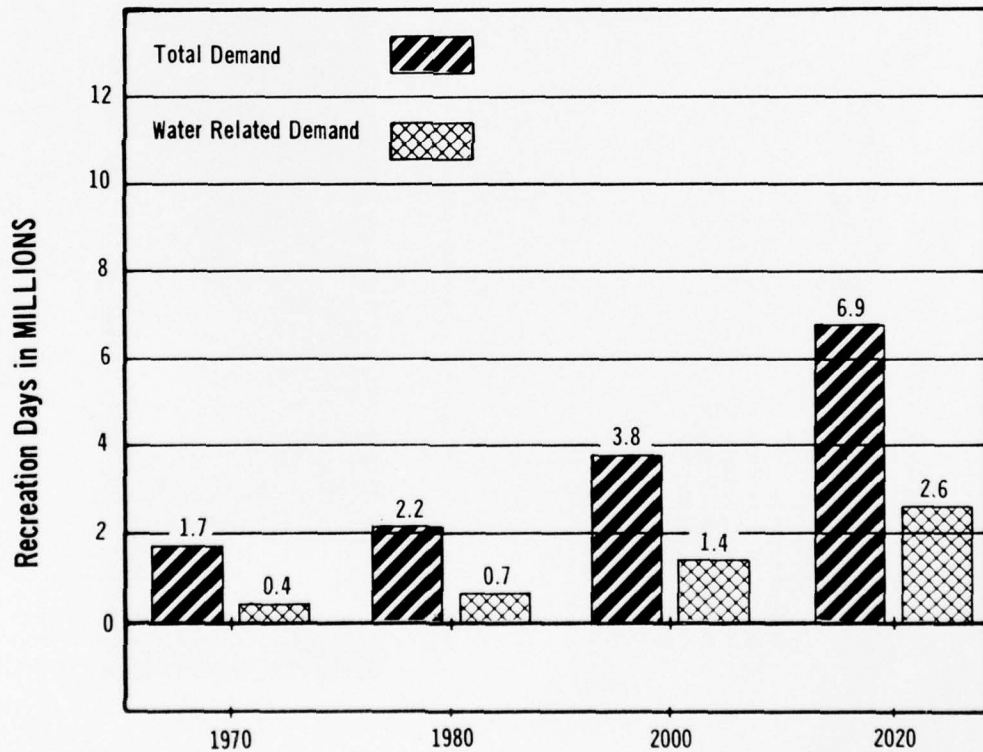


FIGURE 48 Expected Growth of Recreation Demand

Subregion 12

The demand totals in table 135 represent 0.54 percent of the regional totals in 1980 and 0.47 percent of those in 2020. These estimates are probably very conservative. As Subregion 9 and the adjacent State of California become more crowded and as access to Subregion 12 is improved, the relative percentage of regional demand in the subregion probably will increase above the totals shown in table 135. The special recreation attractions and the large amount of available recreation land are explained in the "Present Status" section.

Private recreation resources provide many opportunities throughout this subregion. The type of experiences varies from use of ranches and desert lands for hunting activities to attending rodeos. A major part of the recreational use of the private areas takes place in conjunction with adjacent public lands.

OUTDOOR RECREATION NEEDS

The existing recreation use is occurring with few developed facilities. Additional facilities will be needed to properly accommodate expected future recreational use.

The comparison between recreation demand for 1970 (1.6 million) in the Oregon Closed Basin and the estimated 1970 use (1.2 million) indicates that about 75 percent of the total sub-region demand is being met with developed facilities.

The need for development of recreation land and water is shown in figure 49.

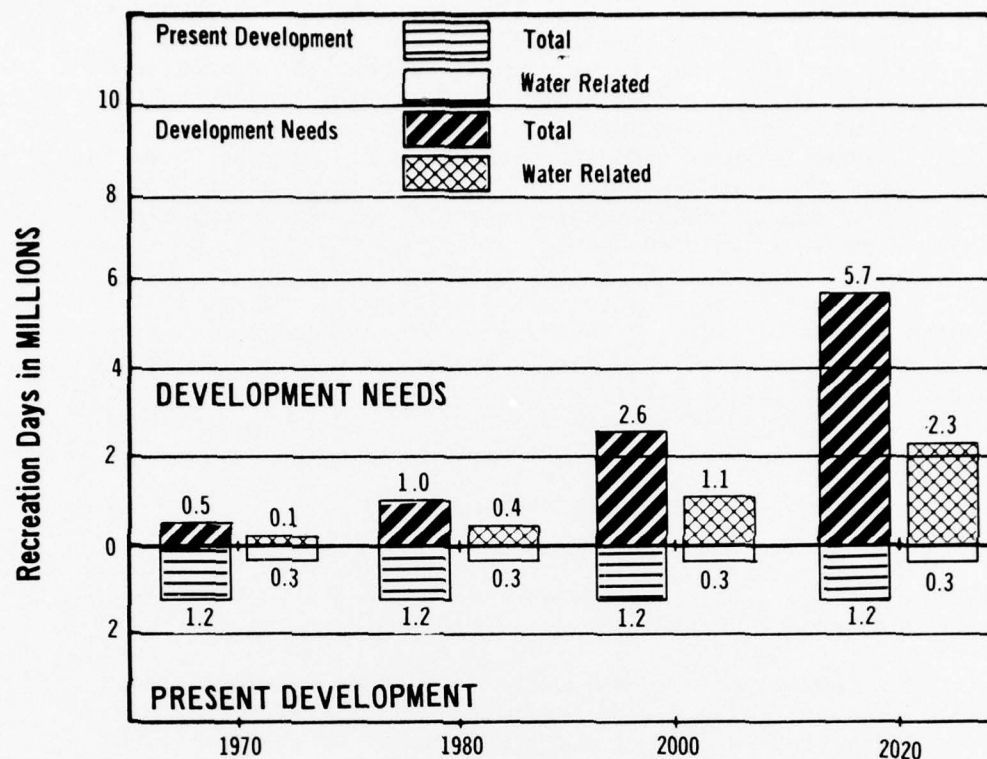


FIGURE 49 Need for Recreation Facility Development Subregion 12

An analysis, using the entire subregion, does not account for the distribution of the resource. There are imbalances between supply and demand when an analysis is made on the basis of the level of government.

The 1970 use, including hunting and fishing, was about 1.1 million recreation days. The recreation use in the subregion could be increased 50 times. However, the actual capacity may be considerably less because much of the acreage is relatively flat, featureless high desert terrain.

MEANS TO SATISFY NEEDS

First priority efforts should be devoted to satisfying the outdoor recreation needs of the nonresident use. With nearly 1,000 acres in county or city parks for an urban population of about 5,000, or 200 acres per thousand people, the resources for satisfying this need in the foreseeable future are available. Available acreage will need more intensive development.

Since the subregion has a very large recreation capacity compared to existing or projected future needs of the local residents, future efforts should be devoted to preserving suitable primitive and natural values and wide open spaces and to improving access to and recreation and interpretive facilities for other areas. This would be largely for weekend or vacation-type trips by visitors from other subregions or regions. See map showing some possibilities for primitive area designations.

One of the outstanding opportunities is in the field of nature study (birdlife, especially waterbirds; geology, especially the fault areas; glaciated valleys in Steens Mountain; lake basins; wildlife and unique plant associations).

The supply of game animals and birds is good and could be increased through habitat improvement, including irrigation. There are many opportunities for increases in trout fishing and water-based recreation through the construction of small reservoirs in the headwaters of streams such as the Silvies, Blitzen, Deep Creek, and Chewaucan.

There are ample opportunities for increases in water sports, hiking and riding, off-highway vehicle use, rockhounding, and camping.

All of the foregoing opportunities are contingent upon the installation of adequate facilities and the availability of funds and personnel for maintenance, interpretation, and visitor control.

Development of the Resource

Table 136 lists the estimated land and water requirements by activity.

Table 136 - Land and Water Requirements for Water Related Demand, Subregion 12

Activity	1970	1980 (Acres)	2000	2020
Camping and Picnicking				
Land	110	125	230	450
Water	220	250	460	900
Swimming				
Land	3	5	10	20
Water	9	15	30	60
Boating and Water Skiing				
Land	10	17	35	60
Water	400	750	1,500	2,700
Shoreside Hiking				
Land	40	50	75	140
Water (not determined)				
Total Land (Rounded)	160	200	350	670
Total Water (Rounded)	630	1,020	2,000	3,700

Table 137 contains an estimate of the acquisition and development needs by level of administration.

Table 137 - Land Acquisition and Development Needs for Water Related Recreation Demand, Subregion 12

	(1) Land/ Inventory BOR I & II	(2) Existing/ Facility Development	(3) Water Related/ Development Needs			(4) Land Acquisition Needs			(5) Facility Development Needs		
			1980	2000	2020	1980	2000	2020	1980	2000	2020
	(1,000 Acres)					(1,000 Acres)					
Federal	0.6	0.3	0.13	0.26	0.45	-	-	-	-	-	0.15
State	0.6	-	0.03	0.05	0.10	-	-	-	0.03	0.05	0.10
County and Municipal	-	-	0.01	0.03	0.05	0.01	0.03	0.05	0.01	0.03	0.05
Private	-	-	0.03	0.06	0.10	-	-	-	0.03	0.06	0.10
Total	1.2	0.3	0.20	0.40	0.70	0.01	0.03	0.05	0.07	0.14	0.40

1/ Data from table 132 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

2/ Data from table 133 (Acreage of water related lands based on the proportion of existing developed sites associated with water to those sites not associated with water.)

3/ Data from figure 49.

NOTE: Column (4) is derived by subtracting column (1) from column (3).

Column (5) is derived by subtracting column (2) from column (3).

A dash (-) indicates no need to accelerate existing programs.

Activity Development Needs

The following discussion considers the water related recreation needs as viewed from specific activities.

Boating

The following table lists the estimated number of pleasure boats and projections:

Table 138 - Pleasure Boats and Projections, Subregion 12^{1/}

<u>Item</u>	<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
Trailered	400	700	1,400	2,500
Car Top	150	250	450	850
Moored	30	50	100	200
Stored	<u>10</u>	<u>20</u>	<u>40</u>	<u>70</u>
Total	590	1,020	1,990	3,620

^{1/} Based on preliminary data from Pleasure Boating in Oregon, July 1, 1966, by the State Marine Board.

On the basis of the above information, the estimated number of lanes of boat-launching ramps required to accommodate the pleasure boats is as follows:

<u>1970</u>	<u>1980</u>	<u>2000</u>	<u>2020</u>
5	10	15	25

There is ample public land and water presently available to accommodate current and projected needs. However, because of shallowness, high alkalinity, and yearly variations in water levels, many of the lakes are of low quality for boating purposes. To improve this quality, measures such as diking and upstream impoundments may be necessary.

Swimming

There is more than enough water-surface area to support all demand for swimming. There is a need to provide additional access and to develop additional beach space. Land requirements to accommodate this activity are estimated to be 3 acres in 1970, 5 acres in 1980, 10 acres in 2000, and 20 acres in year 2020.

Camping and Picnicking

There will be a need to expand the capacity of the camping and picnicking facilities in this subregion, both now and in the future. Sites located close to the main routes of travel are of primary need. The land requirements to accommodate these activities adjacent to water, either streams or lakes or reservoirs are estimated to be 110 acres in 1970, 125 by 1980, and 230 by year 2000, and 450 by year 2020. It may be necessary to acquire private lands to provide public facilities near the population areas if the private interests do not undertake such development. There should be ample developable land already in Federal ownership to accommodate the need for vacation and weekend use.

Hiking

There are ample public domain lands to accommodate the need for hiking and horseback riding. There will be a need for trail development in the mountainous areas.

Nature Walking

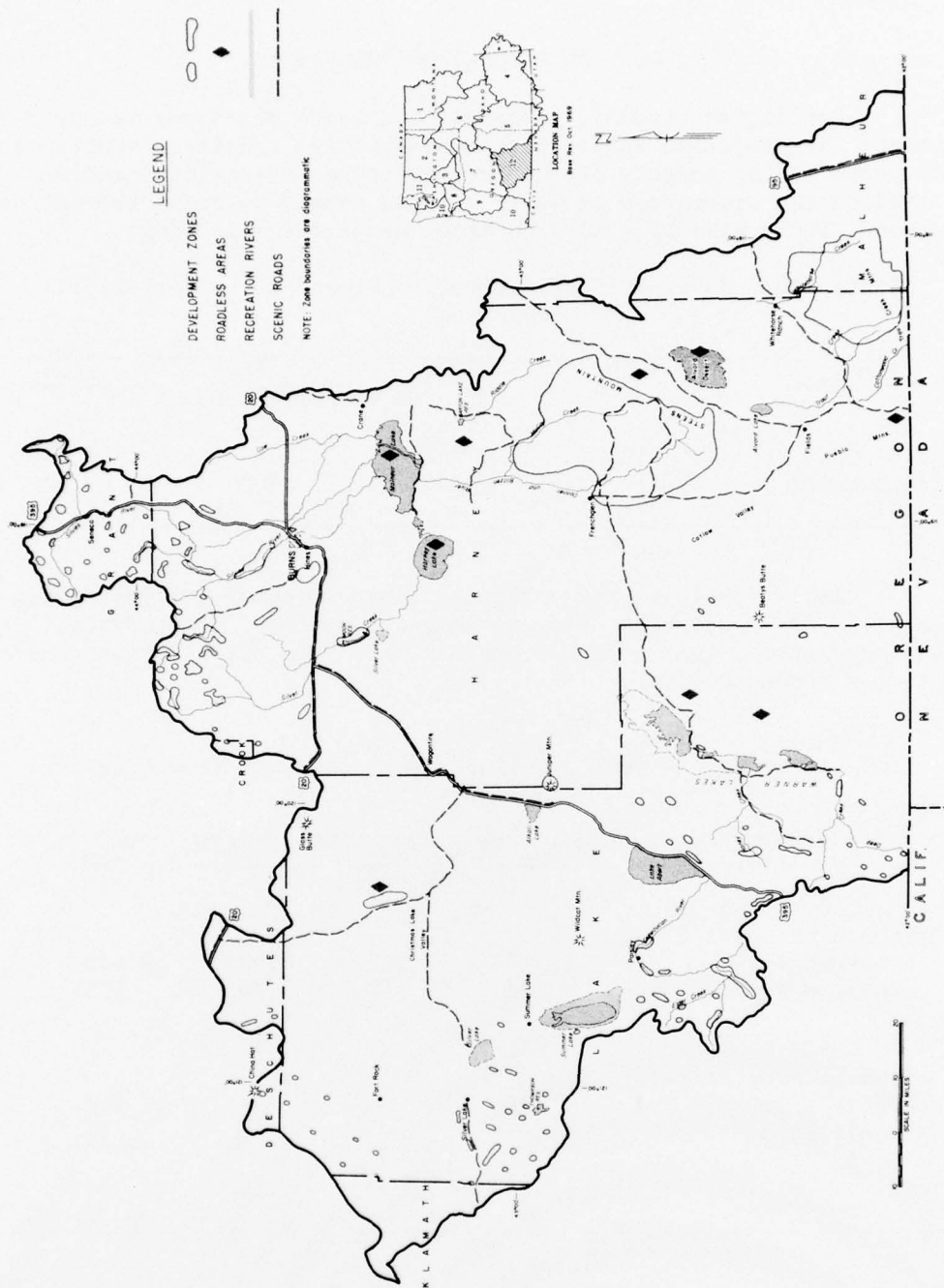
This subregion has interesting wildlife, geologic formations, minerals, and archeological materials that are mostly exposed to view due to the sparse vegetation. There are sufficient public domain lands available to accommodate the need for nature walking, but trail development is needed. It is estimated that there will be a need for 40 miles of trail by 1970, 50 miles by 1980, 75 miles by year 2000, and 140 miles by year 2020.

Driving for Pleasure and Sightseeing

This subregion has many roads, but most are unimproved and suitable only for more rugged trucks and four-wheel drive vehicles. The open range is ideal for sightseeing. There are about 650 miles of potential scenic roads, of which the greatest part is in need of improvement. Figure 50 is a map showing the location of potential development zones and other features.

Winter Sports

This subregion lacks winter sport areas of importance. The nature of the topography and lack of dependable snow quality will largely prevent the development of important winter sport areas.



COLUMBIA-NORTH PACIFIC
COMPREHENSIVE FRAMEWORK STUDY
**POTENTIAL
RECREATION AREAS**
OREGON CLOSED BASIN
SUBREGION 12

COST OF RECREATION PROGRAMS

Facilities, access, programs, and lands necessary to accommodate the projected water related demand will require a substantial increase in the budgets of the recreation administering agencies. Based on the percentage of water related demand to total recreation demand, there will be a need to accommodate the following:

Table 139 - Water Related Recreation Demand to be Satisfied, Subregion 12

Item	1970	1980 (1,000 Recreation Days)	2000	2020
Total	100	240	700	1,540
Incremental	100	140	460	840

Table 140 lists the estimated capital investment cost based on \$4.15 per recreation day, the annual operation, maintenance, and replacement cost at \$0.25 per day, and the cost associated with studies recommended.

Table 140 - Development and Study Costs of Recreation Programs, Subregion 12

Item	1970-1980	1981-2000 (\$1,000)	2001-2020	Total
Development Costs				
Investment	1,660	2,905	4,980	9,545
Annual OM&R	100	175	300	575
Study Costs				
Free Flowing Rivers	-	-	-	-
Roadless Areas	208	-	-	208
Scenic Roads	16	-	-	16
Total	1,984	3,080	5,280	10,344

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Information from the following sources was used in preparing this report. Specific references have not been included within the text.

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G L O S S A R Y

ACTIVITY OCCASION - Participation by an individual in any one recreation activity during any part of a 24-hour period.

DEMAND, LATENT - That recreational demand which is inherent in the population but not reflected in the use of existing facilities--preferred participation which is yet unrevealed.

DESIGN RECREATION LOAD - The maximum number of recreationists expected to use an area at any one time on an average week-end day during the peak month of annual visitation for which facilities and land or water would be provided.

LAND ORIENTED RECREATION ACTIVITY - A recreation activity that is essentially dependent upon a land area for fulfillment.

OTHER GENERAL ACTIVITIES - Recreation activities not primarily dependent on bodies of water including driving for pleasure, mountain climbing, walking for pleasure, playing outdoor games and sports, bicycling, attending outdoor sports and drama, and horseback riding.

OUTDOOR RECREATION - Leisure time activities which utilize an outdoor setting.

OUTDOOR RECREATION ACTIVITY - A specific leisure time pursuit of an outdoor recreation opportunity.

OUTDOOR RECREATION AREA - A land and/or water area where outdoor recreation is recognized as the dominant or primary resource management purpose.

OUTDOOR RECREATION FACILITY - Recreation structures or conveniences supplied in a designated area for outdoor recreation activities.

OUTDOOR RECREATION RESOURCE - Land and water resources capable of providing outdoor recreation opportunity.

OUTDOOR RECREATION SITE - A tract of land developed for specific recreation activities.

OUTDOOR RECREATION UNIT - A facility or group of complementary facilities normally in a camp, picnic site or park, designed to accommodate a family or other small group.

RECREATION CAPACITY - Annual number of recreation days that can be accommodated without causing severe damage to the resource.

RECREATION DAY - An individual's participation in recreation activities for a reasonable portion or all of a 24-hour period. Averages 2.5 activities per day.

RECREATION DEMAND - The total participation in outdoor recreation activities which would occur if opportunities to participate were available.

RECREATION MARKET AREA - The zone of program or project influence from which 80 percent or more of the people are drawn on one day outings and/or overnight trips.

RECREATION NEED - The difference between demand and supply. Expressed in terms of recreation days or acres of land and water surface.

RECREATION OPPORTUNITY - The combination of resources favorable for recreation use.

RECREATION SUPPLY - The resources and facilities capable of providing outdoor recreation opportunities. Developed supply refers to sites and areas. Undeveloped supply refers to potential supply.

TOURIST - An individual participating in recreation within a sub-region by residing outside that subregion.

VACATION-USE ZONE - Area beyond the weekend-use zone which normally requires more than 3 hours of travel.

WATER RELATED RECREATION ACTIVITY - A recreation activity dependent on, or enhanced by water including swimming, all boating, water skiing, fishing, picnicking, camping, sightseeing, hiking and nature walks.

WEEKEND-USE ZONE - That area between 40 and 125 miles from an SMSA, which requires 1 to 3 hours of travel time.

PARTICIPATING STATES AND AGENCIES

STATES

Idaho	Nevada	Utah	Wyoming
Montana	Oregon	Washington	

FEDERAL AGENCIES

Department of Agriculture	Department of Housing &
Economic Research Service	Urban Development
Forest Service	Department of Transportation
Soil Conservation Service	Department of the Interior
Department of the Army	Bonneville Power Adm.
Corps of Engineers	Bureau of Indian Affairs
Department of Commerce	Bureau of Land Management
Economic Development Adm.	Bureau of Mines
National Oceanic & Atmospheric	Bureau of Outdoor Recreation
Administration	Bureau of Reclamation
National Weather Service	Fish and Wildlife Service
National Marine Fisheries	Geological Survey
Service	National Park Service
Department of Health, Education,	Department of Labor
& Welfare	Environmental Protection Agency
Public Health Service	Federal Power Commission